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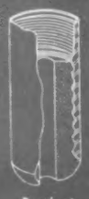

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Trends

Texas Operators Face Climax on Production Rate

PARTIAL blockade of coastwise petroleum shipments resulting from government diversion of 50 tankers to British shuttle service is rapidly moving Gulf Coast conditions to a climax. Testimony at this week's Railroad Commission hearing in Austin, Tex., which lays the predicate for the July proration order, indicated that the pileup of stocks will have to be considered. Majority of Texas operators either did not care to express themselves or withheld opinions on the production adjustments that may be forced by the transportation snarl.

CRUDE PRODUCTION *3,834,220 bbl. daily average—up 33,745 bbl. One year ago 3,845,387 bbl.*

CRUDE STOCKS *260,956,000 bbl. as of June 7—down 1,400,000 bbl. One year ago 259,706,000 bbl.*

GASOLINE STOCKS **92,478,000 bbl. as of June 14—down 454,000 bbl. One year ago 97,700,000 bbl.*

RESIDUAL FUEL-OIL STOCKS *93,182,000 bbl. as of June 14—down 202,000 bbl. One year ago 103,699,000 bbl.*

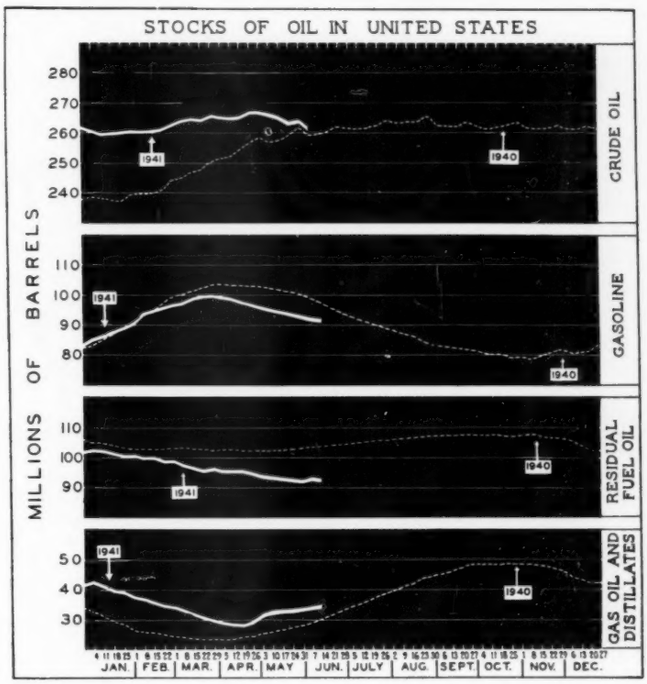
GAS OIL AND DISTILLATES *35,060,000 bbl. as of June 14—up 755,000 bbl. One year ago 30,545,000 bbl.*

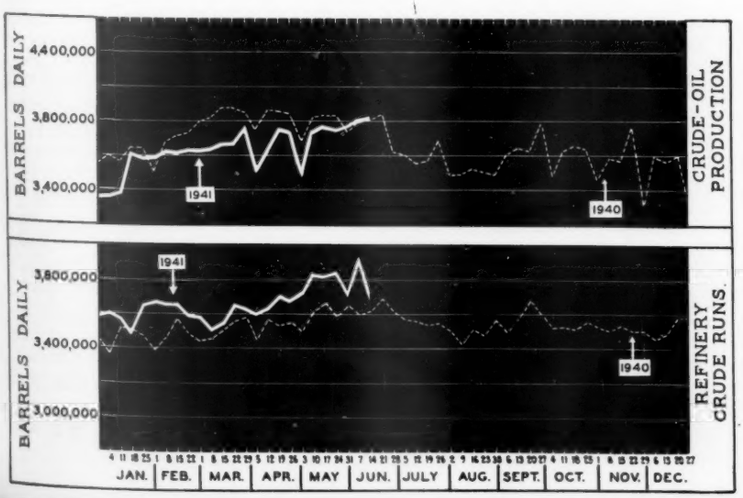
REFINERY RUNS *3,755,000 bbl. daily week ended June 14—down 125,000 bbl. One year ago 3,620,000 bbl.*

*Includes 7,492,000 bbl. aviation motor fuel, up 55,000 bbl. One year ago 5,407,000 bbl.

Another increase in crude stocks on the Gulf Coast was reported for the first week of June, although Texas, as a whole, liquidated storage to the extent of 725,000 bbl. during the 7 days. The increase in Gulf Coast crude stocks amounted to 330,000 bbl. for the week, indicating a surplus there of more than 47,000 bbl. daily. Stock liquidations in other parts of the state may have easily accounted for the advance in coastal inventories.

Action of the petroleum administration in Washington this week indicated that Messrs. Ickes and Davies will impose compulsory rationing of petroleum in eastern states only in extreme emergency. They blocked the loading of 250,000 gal. of low-grade lubricating oils on a Japanese freighter at Philadelphia, Pa., and followed through by "suggesting" that eastern companies refrain from making sales for offshore shipment without prior consultation with the coordinator's office. Events indicated that future petroleum export sales will be diverted to sources where supplies are abundant and where there is no necessity to use hard-pressed transportation facilities for either primary delivery or replacement service. Obviously, this development may mean that Gulf Coast producers, prevented by boat diversions from maintaining normal shipments to the East Coast may, by exigencies of restrictions, receive export business that North Atlantic ports usually supply.





DAILY AVERAGE PRODUCTION FOR WEEK

	June 14, 1941	Bur. Mines June est. of demand	June state allowables	June 7, 1941
Arkansas	73,400	83,000	73,612	73,450
California	649,225	615,300	575,000	629,325
Eastern fields	112,500	122,300	.....	110,000
Illinois	342,845	345,300	.....	341,845
Kansas	218,550	220,400	232,400	201,650
Louisiana	322,250	319,700	319,500	324,250
North Louisiana	*74,000*	.....	.....	*73,250*
Louisiana Gulf Coast	*248,250*	.....	.....	*251,000*
Michigan	38,050	38,000	.....	37,850
Mississippi	29,100	23,300	.....	26,700
Nebraska	4,450	4,300	.....	4,200
New Mexico	113,210	113,000	113,000	115,400
Oklahoma	415,550	459,700	415,000	421,575
Rocky Mountain states	109,090	114,000	.....	111,030
Texas	1,406,000	1,371,700	1,362,280	1,403,100
East Texas	*373,400*	.....	.....	*373,260*
West Texas	*261,900*	.....	.....	*260,250*
North Central Texas	*129,500*	.....	.....	*129,650*
East Central Texas	*79,650*	.....	.....	*80,300*
Texas Panhandle	*74,300*	.....	.....	*74,300*
Texas Gulf Coast	*393,050*	.....	.....	*392,600*
Southwest Texas	*94,200*	.....	.....	*92,800*
Total United States	3,834,220	3,830,000	.....	3,800,475
Total production Jan. 1-June 14, 1941		577,317,815 bbl.		
Same period last year		594,983,083 bbl.		

Much of the confusion that has existed for oil men since declaration of a national emergency and through appointment of the two top men in the coordination effort may be soon removed. The first industry-wide conference with Coordinator Ickes was under way in Washington Thursday. Washington observers think a definite program for the oil industry and appointment of personnel to administrative committees will soon follow.

Meanwhile, the industry and Government are progressing on solutions to the transportation situation. The Cole pipe-line bill—the real key to construction of one or more lines from the Southwest to the East Coast—has passed the House. Favorable Senate action within 2 weeks is likely.

Look for Industry Defense Program to Be Defined Soon

By HENRY D. RALPH

WASHINGTON, D. C., June 17.—A program for the oil industry's part in national defense will begin to evolve very shortly, either at or soon after the general conference of the industry called by Harold L. Ickes, petroleum coordinator for national defense, to meet in the auditorium of the Interior Department building here Thursday, June 19.

Calling of this conference confirms other indications that Mr. Ickes and his newly appointed deputy coordinator, R. K. Davies, intend to work closely with the industry, to depend on industry cooperation, and to obtain full information before taking any important steps.

The conference is open to the entire industry and a general call was issued for the purpose of notifying all persons interested. The conference, which probably will last but a day, will discuss plans to further the effective utilization of petroleum resources in the national emergency, and the coordinator stated that he hoped that all who believe they can contribute anything worth while to the meeting will attend. "It is my hope," he said, "that all branches of the industry will respond to the invitation in order that there may be a full discussion of the problems confronting both my office and the industry."

The major problem, of course, is, and for some months will be, the shortage of transportation to the Atlantic seaboard. Every possible means of transportation is being considered, but it appears certain that gasoline and fuel-oil supplies will be barely sufficient, at the most, during the latter part of this year. The combined total of various means of transportation, plus some reduction in consumption by voluntary curtailments and more efficient uses, may be sufficient to avoid compulsory rationing. In any event, Coordinator Ickes has made it plain, compulsory rationing in the East is a last resort, and such a step will not be taken without careful and detailed study.

Ickes Predicts Restrictions

At a press conference last week Mr. Ickes said that restrictions on the East Coast appear to him to be inevitable, but Mr. Davies amended this by explaining that he agrees with the statement as of today but that a lot of information is being obtained and plans are being formulated which may make it possible for the coordinator's office greatly to lessen the strain of the shortage. Mr. Ickes added that this will be particularly true if users cooperate to avoid waste and nonessential use of petroleum products. They stated that inventories in the East are declining and that only about 1 month's supply remains in storage. The pinch will come during the third and fourth quarters of this year.

The petroleum coordination program is starting off with pledges of cooperation on all sides, a fact which augurs well for harmonious relations and smooth execution of defense plans. Secretary Ickes commented on this situation, saying: "I have never seen a greater or more commendable willingness to cooperate with Government than that displayed by the oil industry. I do not believe there is anything that the Government could suggest which they would not be willing to do."

Offers of cooperation have been coming in from many divisions of the industry. The Oil Burner Institute has proposed ways of using fuel oil more efficiently, the American Automobile Association has offered a program of reducing the wasteful use of gasoline by motorists, and distributors have pledged cooperation in any program of voluntary curtailment of consumption.

This cooperation is expected to carry over into the coordinator's staff, to be appointed almost any day now. The pattern of the N.R.A. oil code will be followed, according to present indications, with some improvements. Then there was a government board in one part of town and an industry code authority in another part, and the two frequently were as far apart mentally as physically. Present plans call for a staff of perhaps a dozen men, to start with, chiefly picked from prominent positions in the oil industry but paid by the Government, assisted by several committees, or subcommittees of an overall industry advisory group, representing all geographical and functional divisions of the industry. The industry committees will not be paid and will not be expected to stay in Washington for long periods nor to operate in an administrative capacity. When these committees meet, either on call of the coordinator or on their own initiative, they will meet with the coordinator's staff and function as parts of that staff rather than as a separate entity.

Act to Improve Situation in Regard to Tanker Shortage

POSSIBLE ways of obtaining more tankers to supply the eastern seaboard are being studied by the coordinator's office in cooperation with other federal agencies, but to date the only definite step taken is House affirmative action on legislation to increase the load line of tankers and other ships. No request has yet been made to utilize the tankers now carrying California oil through the Panama Canal to Atlantic ports, but this movement is under study and such a request is generally expected. The Maritime Commission is planning to ask all tanker owners to divert as much tonnage as possible to the Gulf-North Hatteras run.

Through the Office of Coordination of Commercial and Cultural Relations Between the American Republics, diplomatic officials of Latin American countries are being told that all countries in this hemisphere may have to curtail their consumption of petroleum products because of the tanker shortage, and are being asked to request their governments to make plans accordingly. A rearrangement of tanker routes in South and Central America probably could shorten trips and increase annual carrying capacity.

Secretary Ickes does not question the action of the Maritime Commission in taking 50 tankers for the British shuttle service, and will not ask for their return. He has not indicated whether he would resist transfer of still more tankers, except that he is on record as favoring all possible aid to Britain.

A study is being made of all tankers in foreign registry owned by American citizens or subsidiaries of American corporations, and it is quite possible that some of these may be recalled to American registry and used in coastal service. Pending the completion of this study the Maritime Commission issued a list of all such tankers as of May 1, 1941, and declared that American owned or controlled tankers are not carrying oil directly or indirectly to Germany, Italy, or Japan. The statement said:

Contents of Statement

"No owned or controlled tankers under American registry have engaged in trade to these countries since the outbreak of the war. A check of American owned or controlled tankers under foreign registry shows that none is currently engaged in such a way or has been for the last 6 months, with the exception noted below.

"This record excepts the activities of five tankers registered under the German flag and five registered under the Italian flag. Owners of these tankers have been unable to exercise control over their movements during the last 1½ years and have no authentic reports on their activities. A solitary ship under another foreign registry is

FOREIGN-FLAG TANKERS OWNED OR CONTROLLED BY AMERICAN COMPANIES AS OF MAY 1

	No. vessels	Gross tonnage
Argentine	5	11,362
Belgium	1	5,322
Great Britain	88	547,513
Cuban	1	1,983
Danish	1	1,099
French	6	37,816
German	5	49,591
Honduran	1	7,623
Italian	5	35,835
Netherlands	7	39,539
Norwegian	12	96,414
Panamanian	60	498,398
Venezuelan	22	62,617
Total	214	1,395,112

completing a voyage to Japan under a contract arranged some time ago. Upon completion of this voyage the vessel will be required for other trades.

"American owned or controlled tankers under all foreign registries have been and are now engaged in Western Hemisphere trades, trades to the United Kingdom and to the Dutch East Indies. This particularly applies to tankers which were at one time under American registry and were transferred to Panamanian registry. As will be seen from the table the largest single group of such tankers are under British registry and are chiefly engaged in United Kingdom services.

"The commission is cooperating closely with Harold L. Ickes, coordinator of petroleum for national defense, and the commission's control over transportation will be exerted in the interests of inter-American trade, national defense and aid to the democracies."

Pipe-Line Bill Scheduled for Senate Hearing This Week

SENATE hearings on the Cole pipe-line bill, designed to facilitate the construction of lines to transport petroleum to the East Coast will be held June 19. Sen. S. Truman of Missouri, chairman of the subcommittee of the Senate interstate commerce committee, who will preside at the hearing, said that he expected to report the bill favorably before the end of next week. The House affirmed the bill 2 weeks ago.

Scores of oil men were in Washington this week for the first general conference with Coordinator Ickes held simultaneously with the pipe-line hearings. This representation assured the industry of a strong voice in Senator Truman's committee hearings.

Describing the bill as "patriotic defense" legislation, Senator Truman stated that he had no specific requests for an opportunity to testify. He said he could see no reason for extended hearings by his committee as very comprehensive hearings had been held by the petroleum subcommittee of the House interstate and foreign commerce committee.

A request that Great Britain be induced to take Texas crude instead of Venezuelan oil was made to Secretary Ickes last week by Jerry Sadler and Olin Culberson, members of the Texas Railroad Commission. During a brief conference they assured the new coordinator of the cooperation of the State of Texas and its oil industry, but pointed out that unless additional transportation facilities are found, between 200,000 and 300,000 bbl. of crude daily will have to go to storage in the Southwest or else there will have to be a drastic reduction in allowables in Texas, Louisiana, and New Mexico. They declared that much of the Venezuelan crude now going to England is supplied by American companies which could substitute Texas crude without difficulty. Secretary Ickes declined to commit himself on this proposal but assured the Texas commissioners that he would consider their suggestion.

Divorcement Hearings Held

With the Government urging the oil industry to build more pipe lines and tankers, an incongruous note was sounded at the Capitol last week when the Senate judiciary committee opened hearings on the three Gillette bills (S. 170, S. 171, S. 172) to make it illegal for an oil company engaged in production to also own pipe lines, tankers, or marketing facilities. Observers see little chance of enactment, but the bills nevertheless constitute a potential threat to the industry.

Hearings were held by a subcommittee headed by Senator Chandler of Kentucky. After a brief session, the hearings were recessed until June 26 when Secretary Ickes will be asked to appear if he desires. Senator Guy M. Gillette of Iowa, author of the bills, opened the hearing with a review of the history of this legislation, explaining that its origin was a letter from President Roosevelt in April 1933 approving a recommendation of independent oil producers that emergency legislation be enacted divorcing major companies from pipe-line ownership.

Anticipating that the defense emergency would be cited as a reason for not enacting such legislation, Senator Gillette said that it is for the committee to decide whether the defense program would be hampered by these bills or whether defense is being used as a cloak to protect private interests. He pointed out that defendants in pending divorcement suits brought by the Department of Justice have been attempting to have that litigation dropped, and that officials of these defendant companies are now among the industry advisers to various government agencies concerned with defense. Therefore, he said, Congress should determine the line between national defense and private interest.

Supported by Jobber Groups

Supporting the Gillette bills were representatives of independent jobbers, including Paul E. Hadlick, secretary of the National Oil Marketers Association; A. C. Gienapp, secretary of the Iowa Independent Oil Jobbers' Association; Robert W. Hadlick, secretary of the Missouri Independent Oil Jobbers' Association; M. B. Whiting, president of the Virginia Petroleum Jobbers Association; and H. J. Stoke, vice president of the Roanoke (Va.) Oil Co. They charged that major oil companies use profits on pipe-line and tanker transportation to offset losses in marketing, injuring independent jobbers who can market more efficiently than the majors if allowed to obtain supplies on an equal basis, declaring that the legislation would not increase prices to consumers.

In a brief statement in opposition, William R. Boyd, Jr., vice president of the American Petroleum Institute, told the subcommittee that the oil industry is preparing to spend $300,000,000 to meet additional transportation and storage needs requested by the administration, while these bills would make it illegal for the companies to own them. The A.P.I. is expected to make a more elaborate presentation at a later date if hearings are continued.

Senator Gillette's bills designed to dismember the oil industry into several branches were first introduced in Congress about the time antitrust suits were tried in Madison, Wis. The Government's insistence on industry cooperation during the emergency appears to give the disintegration bills little chance of enactment.

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O.E.M. Defense Photo

Quinn Shaughnessy, above, price executive for the fuel section of the Office of Price Administration and Civilian Supply and Dr. J. K. Galbraith, right, director of the price division, O.P.A.C.S., whose policies are exercising increasing influence on the petroleum industry

This Week...

WASHINGTON . . .

Prompt organization of the petroleum coordinator's staff is expected to follow the general industry meeting June 19 called on short notice last Saturday by Secretary Ickes. General invitation to the industry was later supplemented by telegraphic requests for presence of ranking oil men.

●

Coordinator Ickes has made it plain in statements this week that compulsory rationing of petroleum consumption on the eastern coast will be used only as a last resort.

●

Senate subcommittee hearings on the Cole pipe-line bill, passed 2 weeks ago by the House, were being held June 19 in Washington. Senator Truman, chairman of the group handling the bill, expects to report it out favorably by the end of next week. It cloaks defense pipe lines with power of eminent domain, unblocks right-of-way and promises to speed construction of lines from the Southwest to New York.

●

An increase of 3 per cent in the cargo capacity of coastwise tankers will result, if the Senate affirms, as the House did this week, the Bland bill liberalizing load-line restrictions.

●

General restriction on petroleum exports from the East Coast has been imposed. Ralph K. Davies, deputy coordinator, "suggested" to 32 eastern companies that no further sales for offshore shipment be made in that section of the country without prior consideration by his office. Earlier, loading of 250,000 gal. of lubricating oil at Philadelphia, Pa., on a Japanese freighter was delayed. Philadelphians wired protests, saying the oil was needed for manufacture of fatty acids for defense purposes.

●

Government officials are studying distribution of tankers owned and controlled by American interests with the possible objective of returning those in non-essential foreign service to American registry and thus qualifying them for coastwise trade.

●

GENERAL TRANSPORTATION . . .

Procurement of right-of-way for the Plantation Pipe Line Co. products line from Baton Rouge, La., to Greensboro, N. C., was progressing through Louisiana this week.

●

Two tankers were completed in May and three more were launched. There are now 140 tankers either under construction or contract with American shipyards. Sixty-eight of the total are for private interests and remainder for the Maritime Commission.

●

An increase of 50 per cent over last year in the number of oil barges under construction is shown in the June report of the American Bureau of Shipping. Indications are that inland waterways are to be used extensively in solving the transportation problem.

●

Use of the Sinclair pipe-line system for moving Mid-Continent oil to Chicago, Indiana Pipe Line Co.'s facilities to Lima, Ohio, and tank cars to Bayway, N. J., is receiving serious consideration as a temporary expedient for effecting crude deliveries to the East Coast.

●

PRODUCTION . . .

Testimony came from one witness at the regular Texas proration hearing Monday that crude is backing up on the coast and that production should be cut in that state to compensate for the loss of tankers. Panhandle purchasers want more oil and asked abandonment of 2 shutdown days in the July order.

●

Illinois crude oil is distributed to 47 refineries in 10 middle-western and eastern states and to Canada at the current rate of 345,000 bbl. daily.

●

California Oil Producers Agency has mailed 800 questionnaires to producers in that state through which it is expected to establish cost justification for the price advance May 23. Permanent delay of the price-reduction order from the Office of Price Administration and Civilian Supply is sought.

●

The California petroleum industry inserted copy in 14 state papers June 10 telling the story of how the Government's diversion of American tankers is exclusively responsible for any threat to local petroleum supplies in this country.

●

Oil was discovered in a Terry County, Texas, wildcat operation midway between the Slaughter and Wasson fields, which are separated by 20 miles of untested or only partially explored territory.

●

Footage drilled in 11,475 wells completed in 5 months this year is as much greater as the number of finished operations is behind the comparable 1940 record.

Bland Bill Would Increase Tanker Capacity by 3%.

WASHINGTON, D. C., June 16.—In another step designed to alleviate the impending shortage of petroleum on the East Coast caused by the transfer of 50 tankers to the British service, the House passed the Bland bill, authorizing the secretary of commerce to raise the load lines on tankers from the present limitation up to the safety line.

It was estimated by Coordinator Ickes that such action would increase the capacity of the tanker fleet by about 3 per cent, or the equivalent of a 10-in. pipe line from East Texas to the Atlantic.

Urging immediate enactment of the legislation on the grounds that it is vital to the national defense effort, a committee stated that oil tankers engaged in coastwise trade would be enabled to deliver approximately 40,000 bbl. per day more of petroleum products on the Atlantic Coast than are being delivered at present if the limitation now in effect is removed.

"Special mention has been made of the effect of the bill, if enacted, on the transportation of petroleum products, as the shortage of tank vessels at the present time is well known," the committee stated in its report. "The same considerations to a somewhat lesser extent also make it vital that other cargo ships be permitted to carry more tonnage, as the shortage of all such bottoms is apparently becoming more acute."

The legislation was also strongly recommended by Defense Petroleum Coordinator Ickes: Chairman Emory S. Land, of the U. S. Maritime Commission; William S. Knudsen and Sidney Hillman, directors of the Office of Production Management; as well as representatives of the Bureau of Marine Inspection and Navigation of the Department of Commerce.

"The application of this proposal to petroleum tankers engaged in coastwise traffic is of particular interest to the petroleum coordinator for national defense," Mr. Ickes wrote the committee.

"I have been advised that the change in load lines within the limits of safety will add about 3 per cent to the carrying capacity of the present tanker fleet now engaged in service between Gulf Coast and Atlantic Coast ports." Mr. Ickes continued.

"In terms of annual carrying capacity, this change will mean the addition of from 10 to 15 million barrels of oil in potential deliveries to the Atlantic Coast. A contribution of that magnitude will aid in correcting a situation which, without alleviation, may become even more critical."

Knudsen Urges Passage

Urging immediate enactment of the measure in response to an informal request for a statement of the views of the O.P.M. with respect to the proposal, a letter signed by Mr. Knudsen and Mr. Hillman read, in part:

"It is our understanding that the purpose of this bill is to provide extra carrying capacity, consistent with requirements of safety, for ships during the present emergency and particularly for tankers. Although we are not in a position to comment on technical shipping problems of operation and design, we are in full accord with the purpose of this measure. Any increased amount of cargo space which can be made available is of vital importance, and this is especially true in connection with tankers for petroleum products."

Pennsylvania Crude Oil Raised 20 Cents Per Barrel

OIL CITY, Pa., June 17.—An advance of 20 cents per barrel in Pennsylvania crude-oil prices effective at 7 a.m. June 18 was announced here late today by South Penn Oil Co., Quaker State Oil Refining Corp. and Pennzoil Co. The new prices are:

Bradford-Allegany	$2.75
Southwest Pennsylvania	2.10
Eureka	2.34
Buckeye	2.30
Oil City-Titusville	2.63 to 2.68

Leaders Express Confidence in Industry-Government Program

Industry executives continue to voice their belief that constructive action will come out of the efforts being made to bring about a close working harmony between the industry and the Government. The Journal invited representative company officials to express views on recent developments, and their expressions as received by the Journal are presented on these pages.

E. G. Seubert
President, Standard Oil Co. (Indiana)
Chicago, Ill.

I BELIEVE that the petroleum industry will aid the Government in every practicable and reasonable manner to prepare adequately for the defense of the nation. It has not hesitated so to act in the past. Its history in that respect is one of patriotic service of which oil men can rightly be proud.

Reciprocally, I believe the industry is entitled to the fullest confidence and cooperation of every department of the Government. Its personnel should be recognized as capable of carrying out whatever tasks the industry may face. They should have as much freedom as may be consistent with national interest to work out problems efficiently in their own way.

It is my belief and hope that Secretary Ickes will so coordinate the activities of government and the industry that priority and all other policies will be intelligently directed toward the fullest service of the industry to the Government and the fairest possible treatment of the industry.

As regards the machinery Mr. Ickes should employ, I have no suggestions at present. A petroleum board such as The Oil and Gas Journal proposes could be useful. The exact form arrangements are to take is of less consequence than the principle that the coordinator should have available to him the advice of men of technical knowledge and skill, of extensive experience in operations and management, in formulating the plans and suggestions he may pass along to the existing authorities and to the industry. If the arrangements prove such as to inspire mutual confidence, it should not be difficult to obtain the maximum of effectiveness in development of the Government's program.

I hope the industry may never have to face penalties for its willingness to give its best at this time. The present move toward coordination may be designed to insure fairness to the industry in that respect, but the situation could be clarified by some appropriate action or declaration by the governmental authorities concerned.

I continue to feel that if the industry is given as free a hand as possible to work out problems of production and supply and some necessary cooperation in regard to transportation to the East Coast, there will be few shortages anywhere and those of short duration. Gasolineless Sundays should not be inevitable. Gasolineless Sundays might be detrimental to the defense effort. The public is entitled to retain all privileges and benefits which need not be sacrificed for the sake of defense, and I believe matters can be handled so that the privilege of driving automobiles without restriction can be retained except possibly for a short period in the eastern part of the country.

J. A. La Fortune
Executive Vice President, Warren Petroleum Co., Tulsa

THE United States of America is confronted with some of the most series and far-reaching problems ever faced by this nation. Words, promises, or beautiful language will have little effect on conditions today. Force must meet force; therefore, rearmament on a scale greater than ever before witnessed in any country in the world must be brought about quickly. Cooperation between the governmental officials and all industry is imperative, and we in the oil industry stand ready to supply the necessary petroleum products needed to bring about ultimate victory in this world-wide conflict.

My suggestion for increasing the efficiency and effectiveness of our industry is to establish an oil board in Washington, consisting of an able representative of each oil state, to work with the proper government officials. There is no need nor place for a dictator in the oil industry. Its record for results is proven, its leadership unquestioned, and its workers stand 100 per cent behind the Government. Given the necessary authority and proper assistance from governmental agencies the oil industry can and will deliver the goods in this the most critical period of history.

Al Buchanan
President, Al Buchanan Drilling Co.
San Antonio, Tex.

I AGREE with you 100 per cent that the time has arrived for the organization of a petroleum board, which, cooperating with Washington, will assure the maximum utilization of the industry's numerous services in the emergency which daily becomes more pressing.

I am very much in accord with the president appointing Secretary Ickes, or someone else, as petroleum coordinator for national defense, seeking to coordinate the work of all the agencies of federal and state governments, whose activities have a bearing on the contributions of oil and natural gas to national defense.

We see that he has also appointed Ralph W. Davies, vice president of Standard Oil Co. of California, deputy petroleum coordinator to serve under Secretary Ickes. There is no question but what we should have a petroleum board to cooperate with these two men in every way possible to see that oil is moved to the different points of distribution, for not only national-defense purposes, but for domestic consumption. As we all know, we have unlimited resources of oil. Texas alone could produce three times as much oil as it is producing now, without any physical waste. With proper transportation to the East there should be no reason for gasolineless Sundays, or any slowing down of domestic consumption, along with national-defense requirements. This question could be solved by a board of leading men in the oil industry, as to transportation and proper distribution of oil produced.

The oil industry is ready and willing to do everything it can to support national defense. We are all-out for England and behind the president 100 per cent in his foreign policy. But, probably some of the executives in the administration do not know the exact conditions of the oil industry, and also the requirements of England.

The oil industry is one industry that has not, during the past 10 years, asked the Government for any financial help, but now that we are in an emergency, we are ready to play ball, and we have the goods to deliver. It is only a question of transportation, and with an oil board, cooperating with the coordinator, that should be solved very easily without any excuse for federal control.

Henry M. Dawes
President, Pure Oil Co.
Chicago, Ill.

THE possibilities of accomplishment through cooperation are infinite, and of the disposition of the industry and of the administration to bring this about, I think there can be no doubt. There is, however, one great obstacle, the removal of which is possible, and which would greatly forward the desired accomplishment.

There is a feeling amongst the rank and file of the industry that recent decisions of the Supreme Court in the milk case and the oil cases indicate that cooperative agreement on the part of the members of an industry will be construed as a conspiracy if such an agreement could be used in any way to affect prices, regardless of the intent or whether, in fact, it is used for such a purpose. Furthermore, it seems to me quite clear that no government authority under present laws and decisions can grant immunity or do anything to mitigate this situation except in the negative way of refraining from punitive approach. Also, I think it is quite clear that no government official has either the right or ability to bind his successors.

I take it that you are not asking me, who am not a lawyer, for a legal opinion, but as an executive in the oil business I am stating what I believe to be the feeling of those who will be charged with the responsibility for cooperation and for the conduct of the enterprises with which they are connected, and against whom any attacks will necessarily be directed if they are made.

Legislation has been suggested at one time and

another for many years which would have the effect of permitting industrial agreements and cooperative action that should not be subject to penalty if reported to governmental authorities, who, if they desire, might bring injunctive proceedings which would determine whether this action was contrary to existing law. If, after court procedure, it should be so declared, such agreements should be immediately discontinued, but no penalties assessed unless they were carried on after such court procedure. It would seem to me that Congress would certainly be inclined to approve of such legislation if asked for by the administration at this time.

Of course, the industry will coopérate with Mr. Ickes and of course he will concentrate on meeting the situation with equal sincerity, but it is only fair to say that verbal assurances are not sufficient to allay the fears which are very generally held. This legislation would, I believe, save Mr. Ickes embarrassment as well as increase the enthusiasm of the industry towards cooperation.

Winston P. Henry
President, Putnam Oil Co.
Houston, Tex.

THE appointment of Mr. Ickes as petroleum coordinator is a rather startling example of the ease of government by edict as compared to the legislative processes of a democracy. For the past 5 years Mr. Ickes and his supporters have been endeavoring to secure federal control through legislation by Congress, but a united industry has successfully fought this movement up to the time of this presidential appointment. There is no question but that the business needs a coordinator, but the oil industry would have preferred that the necessary coordination be done through the O.P.M. rather than through the Department of the Interior.

The oil industry will readily admit that Mr. Ickes is able, fearless and honest, and also that he did an excellent job as head of the N.R.A. It is, of course, too early to predict what Mr. Ickes will do, but it is my belief that he will be constructive and helpful. We can safely guess that he will encourage the building of pipe lines; will insist and probably secure the cooperation of all oil producing states in the Interstate Oil Compact Commission; will straighten out the tanker-transportation problem as quickly as such a solution can be arrived at; will influence the passing of conservation acts in those states that are at present without them, and will regulate any shortage in the supply along the eastern seaboard in a constructive manner. I believe, therefore, that the only thing the oil industry has to fear from Mr. Ickes is the danger that he will desire to secure permanent control rather than the temporary administration of the needed coordination during the emergency.

Payne Ratner
Governor of Kansas

RESTRICTIONS on the use of gasoline as a national-defense measure are not needed in Kansas. There is no oil shortage in Kansas. Our proration policies have prevented waste and assured us of an enormous supply of crude oil. We have enough oil in our state to go a long way toward relieving the shortage in the East if ways could be found to transport it there. Within our own borders, Kansas has adequate facilities to transport oil to all parts of the state.

I know that the oil industry is willing to cooperate in every possible way for the advancement of the national-defense program, and I think that the various oil-producing states should also do their part in every possible way. However, it seems to me that the splendid record made by the interstate oil compact, and the methods of conservation practiced in the states comprising the compact, speak for themselves.

Frank Buttram
President, Independent Petroleum Association of America

THERE is no failure of operation within the petroleum industry that should justify gasolineless Sundays or any other restriction of the use of petroleum products.

If there is a threat of such restriction, it will be the result of some interference by outside forces. It may be that such interference is necessary to continue our defense activities. If that is true, there should be permitted such cooperative action as may be necessary to meet such imposed conditions. Whatever is done to meet this situation should be done by the industry that has already through its own efficiency made these products so necessary and so available. In this effort we have a right to expect the encouragement and protection of the Government that has found it necessary to interrupt our operations.

When we get this assistance and cooperation we will get the work done.

John M. Lovejoy
President, Seaboard Oil Co. of Delaware, Inc., New York, N. Y.

I THINK that the policy suggested in your editorial [June 5 issue] is the correct one for the industry to follow at this time. I attended the meeting of the fact-finding committee with Mr. Ickes last Tuesday, and although the secretary had not then had an opportunity to study our problems or to organize his staff, he gave every indication that there would be full cooperation in the defense effort between the Government and the oil industry. It is obvious, of course, that there must be a coordinating authority in Washington as the problems of a great industry such as ours are so intimately interwoven with matters that affect not only our industry but the whole defense effort.

I am hopeful that the secretary will act through industry committees and really function as a coordinator. The industry itself is entirely capable of meeting any demands which may be made, and will be happy to put into effect policies determined and laid down by the Government. It would be unwise, in my opinion, for the coordinator, whoever he may be, to attempt to do anything more than to tell the industry what is necessary, and leave it up to them to work out the details of cooperative effort.

Inland Waterways Will Help Offset Tanker Losses

NEW YORK, June 17.—The 50 per cent increase in the number of oil barges under construction or contracted for in American shipyards as shown in the June report of the American Bureau of Shipping may be regarded as an indication that inland waterways will be utilized to offset the loss of coastwise tankers in meeting the problem of supplying the East Coast market. The June report of the Bureau shows a total of 32 oil barges either contracted for or under construction in domestic yards against 21 as of May 1.

These barges will average 500 gross tons each and will have a capacity averaging 10,000 bbl. Included among the 11 new barges ordered during the month of May were eight 500 gross ton barges for the Standard Oil Co. of Ohio. These barges, 195 ft. long, 35 ft. wide and 9 ft. 10 in. in depth, are typical of those now under construction.

In addition to the barges under construction for service on inland waterways, three towboats are also being built for oil companies. Ashland Oil & Refining Co. is building two 375-ton diesel towboats which with 1,610 hp. are the most powerful of such craft now under construction in United States shipyards, and the Pure Oil Co. is building one 300-ton diesel towboat of 1,500 hp. One power barge, a diesel-operated vessel of 950 tons, is also being constructed for Husky Transit Corp.

This construction program, which is expected to expand in the immediate future, plus the necessity for utilizing inland waterways to offset tanker losses, should result in the greatest increase on record in United States river, lake and canal transportation of petroleum this year. Crude oil and refined products constitute one of the principal commodities moving on inland waterways, including the Great Lakes. Latest available figures are for 1939 when petroleum constituted 9 per cent of all such tonnage.

The report also shows that two tankers were completed during May, the 10,169-ton tanker Stanvac Calcutta for Petroleum Shipping Co. and the 11,237-ton Esso Williamsburg for the Standard Oil Co. of New Jersey. Three tankers were launched during the month, the Stanvac Palembang, 9,800 tons, and the Stanvac Cape Town, also of 9,800 tons, both for Petroleum Shipping Co., and the Sinclair Opaline of 7,600 tons for Sinclair Refining Co. The Stanvac Palembang was launched in the remarkably short time of 114 days from the time the keel was laid.

Completion of the two tankers in May raised the total for the year to eight with a gross tonnage of 81,380 tons. The bureau reports a total of 140 tankers either under construction or contracted for, aggregating 1,333,060 gross tons. Of these 68 are being built by private interests and the remainder by the Maritime Commission. The latter includes five 10,000-ton tankers yet to be completed under the program inaugurated in 1939 as well as the 72 recently contracted for.

OIL BARGES UNDER CONSTRUCTION AS OF JUNE 1, 1941

Owner—	No.	Size	Gross tons
Young Bros., Ltd.	1	160'x38'x10'	500
Sears Oil Co.	1	196'x40'x13'	765
Inland Waterways Corp.	6	195'x35'x10'	510
Stock (Dravo Corp.)	1	195'x35'x9'9"	500
Standard Oil of Ky.	1	225'x35'x10'3"	600
American Barge Line	1	175'x35'x9'9"	450
American Barge Line	2	175'x26'x11'	375
Pan American Refining	1	173'x39'x9'	455
Sabine Transportation	1	205'x40'x10'	615
Stock (Marietta Mfg.)	2	195'x35'x10'	510
Stock (Marietta Mfg.)	1	135'x30'x9'	275
Ashland Oil & Ref.	3	195'x35'x10'	510
Stock (Nashville Bridge)	2	195'x35'x9'9"	500
Crowley Launch & Tug	1	195'x35'x9'9"	500
Standard Oil of Ohio	8	195'x35'x9'10"	500
Total	32		16,020

Record of 1941 Completions Shows Drilling Trend

By W. V. HOWARD

The small decline in the number of completions during the first 5 months of 1941 as compared with the same period in 1940 is more than offset by the greater depths drilled. Average depths in some of the more active areas are more than 10 per cent above the 1940 averages. The large number of shallow wells drilled indicates the "poor man's areas" are still active.

DURING the first 5 months of 1941, 11,475 wells were completed in the United States. Of these 7,981 were oil wells, 1,030 were gas wells and 2,554 were dry holes. The relatively low percentage of dry holes, 22, indicates that wildcatting is being conducted as extensively as in 1939, when 24 per cent of the wells were dry and is on practically the same level as last year.

Considering individual areas, Table 1 shows certain districts in which wildcatting is at a very low level. Among the most noteworthy are West Texas, the Texas Panhandle and the Appalachian area. At the other extreme, we have Michigan, the Forest City basin of Nebraska and Missouri, West Central Texas and Arkansas, where the ratio of dry holes to successful completions is more than double the national ratio.

Although the number of dry holes drilled in Illinois is larger than in any other district, the percentage is not far above the national average and the number of successful completions is second only to the Appalachian area.

Table 2 shows the distribution of wells drilled by depth and average footage drilled per well during the first 5 months of the year compared with last year. When asked the location of the area of most shallow drilling, the average producer thinks first of the East, yet more shallow drilling is being carried on in the Wichita Falls district than in any other. Ohio ranks second, with Kentucky, the Appalachian area, Illinois, and the West Central Texas district following in order. The only district in which more wells are drilled in the "less-than-1,000-ft." category than in any other is the San Antonio district, which ranks eighth following Indiana.

The Appalachian district is far in the lead in the moderately shallow class because of the great activity at Bradford. Then follow Illinois, North Texas, Michigan, Ohio and Oklahoma, North Louisiana and South Texas. With the exception of Illinois and South Texas, this drilling is mainly in older settled areas. More wells are drilled in this category in Michigan, Kentucky, West Central Texas, the Forest City basin, and the southern Rocky Mountain district than in any other class.

Wells of intermediate depth, that is, from 2,500 to 5,000 ft., predominate in Ohio, Indiana, Illinois, Kansas, Oklahoma, North Texas, East Texas, South Texas, New Mexico, Arkansas, and Montana. Kansas and Illinois lead the country in completions in this class with Oklahoma, North, West and East Texas grouped together following.

Deep wells predominate in West Texas, along the Gulf Coast, and in California and Wyoming, with scattered representation elsewhere, while in the "very deep" class coastal Louisiana is far in the lead with 28 per cent of all of the wells drilled in that area completed below 10,000 ft.

Analysis of drilling depths with those recorded only last year shows how rapid the trend to deeper drilling is moving. The national average for the past 5 months is 117 ft. or 3.9 per cent greater than last year's average. The district showing the greatest increase is Kentucky with an increase of 56 per cent in average depth of wells due mainly to the switching of the play from the shallow fields of western Kentucky into the deeper gas area in the East. The Forest City basin also shows an increase in average drilling depth of 34 per cent due to the development of the Falls City pool and the practical cessation of the shallow wildcatting undertaken in Missouri. Ohio's average depth is also up 12 per cent because of the search for deep gas and Indiana's wells are 10 per cent deeper than last year.

In its search for new reserves to replenish its dwindling store, Oklahoma operators are going 276 ft. lower than last year, on the average, or about 10 per cent, while deep drilling along the Gulf Coast has carried averages 663 ft. deeper in coastal Texas and 755 ft. deeper in Louisiana, both being 11 per cent greater than last year's average.

Considered on a footage basis, the amount of drilling so far this year is slightly greater than last year although the number of completed wells is about 3.5 per cent less. The trend toward greater depths continues and there is no sign of slackening off in the monthly completions.

TABLE 1—COMPLETIONS DURING THE FIRST 5 MONTHS OF 1941 SHOWING PERCENTAGE OF SUCCESS

	Comp.	Oil	Per cent	Gas	Per cent	Dry	Per cent
Appalachian	2,283	1,829	80	350	15	104	5
Ohio	604	146	24	274	45	184	31
Kentucky	229	77	34	81	35	71	31
Michigan	339	126	37	24	7	189	56
Indiana	183	103	56	14	8	66	36
Illinois	1,221	889	73	5	0	327	27
Nebraska, Missouri	45	15	33	1	2	29	65
Kansas	746	554	74	25	4	167	22
Oklahoma	605	361	60	55	9	189	31
North Texas	868	557	64	5	1	306	35
West Central Texas	243	100	41	18	8	125	51
West Texas	799	746	94	4	0	49	6
Texas Panhandle	216	199	92	11	5	6	3
East Texas	487	384	79	29	6	74	15
Upper Gulf Coast	443	341	77	20	5	82	18
Lower Gulf Coast	279	203	72	12	5	64	23
South Central Texas	87	51	59	1	1	35	40
South Texas	357	178	50	24	7	155	43
Southeast New Mexico	111	91	82	5	4	15	14
Arkansas	62	30	48	3	5	29	47
North Louisiana	239	136	57	28	12	75	31
Louisiana Gulf Coast	355	243	68	9	3	103	29
Mississippi and Southeast	95	68	72	1	1	26	27
Montana	95	60	63	23	24	12	13
Wyoming	60	48	80	1	2	11	18
Colorado, Utah, Northwest New Mexico	23	10	44	3	13	10	43
California	401	346	86	4	1	51	13
Total United States	11,475	7,981	69	1,030	9	2,554	22

TABLE 2—DISTRIBUTION OF WELLS BY DEPTH AND FOOTAGE DRILLED JANUARY-MAY 1941

	Depths						
	Under 1,000 ft.	1,000-2,500 ft.	2,500-5,000 ft.	5,000-10,000 ft.	Over 10,000 ft.	Average per well Jan.-May 1941	Average per well 1940
Appalachian	73	1,970	211	28	1	1,788	1,783
Ohio	182	207	211	4	0	1,936	1,719
Kentucky	80	92	57	0	0	1,614	1,032
Michigan	11	236	92	0	0	2,015	1,961
Indiana	38	59	86	0	0	1,966	1,787
Illinois	61	483	674	3	0	2,453	2,471
Nebraska, Missouri	4	24	17	0	0	2,286	1,700
Kansas	8	90	644	4	0	3,049	3,145
Oklahoma	21	192	329	73	0	2,941	2,674
North Texas	243	257	324	44	0	2,417	2,418
West Central Texas	59	116	66	2	0	1,968	
West Texas	16	110	330	331	0	4,146	3,918
Texas Panhandle	0	18	198	0	0	3,019	2,996
East Texas	6	23	371	87	0	4,009	4,072
Upper Gulf Coast	4	18	33	355	33	6,765	6,092
Lower Gulf Coast	1	0	57	218	3	5,575	
South Central Texas	35	29	19	4	0	1,882	4,202
South Texas	5	135	187	30	0	2,953	
Southeast New Mexico	9	19	83	0	0	3,096	3,269
Arkansas	5	15	28	14	0	3,572	5,596
North Louisiana	4	139	67	29	0	2,983	2,630
Louisiana Gulf Coast	5	22	42	185	101	7,657	6,902
Mississippi and Southeast	3	5	26	61	0	4,744	4,726
Montana	7	41	47	0	0	2,211	2,611
Wyoming	9	15	16	20	0	3,273	3,259
Colorado, Utah, Northwest New Mexico	3	13	5	2	0	2,191	2,954
California	5	37	134	188	41	6,156	5,952
Total United States	897	4,365	4,350	1,684	179	3,085	2,969

Leasing in Oklahoma Panhandle May Revive Drilling Campaign

By ROBERT INGRAM

One of the major areas leased and explored by geologists and geophysicists in search of new production is the tip of the Oklahoma Panhandle which lies on the western rim of the great Anadarko basin. Oil men have worked over the area before, but not enough to gain any accurate picture of possibilities. Now they are preparing to try again.

RANKING side by side in importance with deep wildcat drilling at present is the search for new producing regions. Illinois and Mississippi were the last regional plays to be developed commercially and explorers are again working with seismograph, gravity meter, magnetometer, surface geology, well logs, laboratory analyses and general hypothesis over possibly productive areas. Ahead of them, or sometimes along with them, have gone the lease men to take up huge, cheap blocks affording protection against the terrific cost of such preliminary testing.

Operators from California, Illinois, Michigan and Oklahoma are at present taking the lead in the search, and their activity is scattered from the Dakotas and Montana to Mississippi and Florida. One of these areas being examined is the Oklahoma Panhandle, particularly the extreme western edge which lies, probably, on the westernmost flank of the Anadarko basin. This sector is typical of such great plains areas as eastern Wyoming and Montana and the Dakotas in that little is known of subsurface conditions. Possible oil-bearing formations are thickly covered with surface material and geologists are forced to combine a limited amount of surface indications with a few scattered well logs and geophysical data. Possible oil-bearing strata are found about 4,000 ft. below the surface.

Oklahoma's Panhandle has attracted prospectors before and appeared to be on the threshold of joining major-producing regions in 1927 when work was halted by the sensational Seminole development and the dark 30's.

Seminole Halts Development

At that time the Ramsey brothers, Walter R. and W. E., now operating as the Ramsey Petroleum Co., brought to a head 3 years of preliminary work with the drilling of a well on state school land in NW NE 27-5-5ecm. The location was on the so-called Boise City dome, one of the few areas in Cimarron County where surface outcrops appear. On February 3, 1927, in the same issue in which it reported that production from Seminole had passed 200,000 bbl. a day, The Oil and Gas Journal noted that the Ramsey well had about 1,900 ft. of black oil in the hole from a sand at 4,095 ft. The oil was said to be 38° gravity and there was practically no gas. The hole was caving badly.

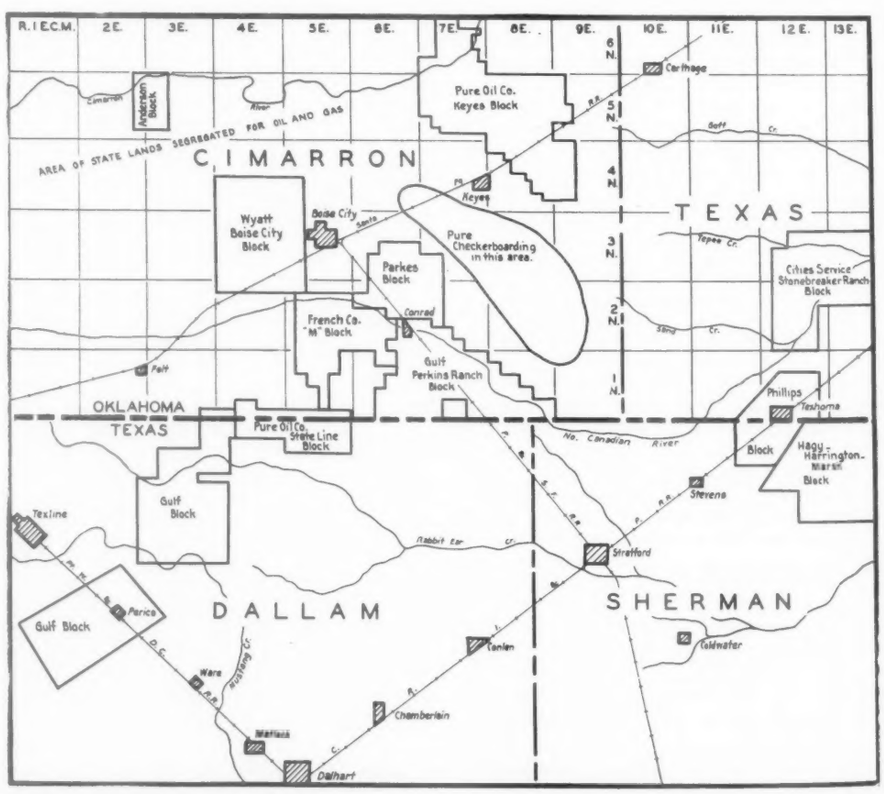
Further reports of the well were buried in an avalanche of news from the Greater Seminole area which soon had 550 rigs running and was producing over 500,000 bbl. of oil a day. It was reported, however, that the Ramsey well was estimated at 20 bbl. a day after a shot of 20 qt., but the hole bridged after the shot. The rig burned later, and the hole was finally lost, after being plugged back from a total depth of 4,681 ft. to 4,123 ft. and then finally to 4,100 ft.

The well was drilled on a structure worked out by the firm of Wood & Wood, Tulsa geologists, who surveyed the region the year before. It was believed that the production came from the Pennsylvanian which at 4,095 ft. was the deepest it had been found in Oklahoma at that time. In spite of the Seminole oil flood, the structure was tested north of the first well by a second Ramsey well in 1928, and by Sinclair Oil & Gas Co. in 1928, by Magnolia Petroleum Co. in 1929 and again in 1930. Finally in 1938, Barnsdall Oil Co. drilled 1 mile south of the Ramsey school to a total depth of 5,503 ft. without finding a significant show. A 1,583-ft. test had previously been drilled in the same section by Empire Gas & Fuel Co. It was abandoned in 1917.

These six wells account for half of all the wells drilled in Cimarron County. Others were drilled in scattered areas without favorable results, and all told give little subsurface information on an area of 1,836 sq. miles included in the county. What they did show, however, has shed some light on the regional structure which has also been further indicated in the last 12 years by development in the south end of the Hugoton gas field to the west in neighboring Texas County, and in the great Texas Panhandle area which now reaches within 40 miles.

Rocky Mountain Influence

In addition, the influence of the Rocky Mountain Range was clearly recognized as early as 1920 and studies of the area made at that time reported an apparent regional folding along a northwest-southeast trend. It is generally believed that "wrinkles" on the flank of the basin extending in this generally parallel direction to the Rocky Mountains will be found in upper Pennsylvanian and lower Permian formations which are worth testing for oil. The problem is to find these traps,



Large blocks of acreage which have been leased in recent months by some of the major oil companies conducting preliminary exploratory work in the Oklahoma Panhandle are shown here. The present play is centered on the area shown

and in view of the absence of surface indications, geophysics is being relied upon heavily.

The fact that the Amarillo gas fields and the Hugoton gas field, which are probably related in some manner to the Cimarron County structure, produce from the Pennsylvanian and Permian formations immediately below the red beds and salt, makes the possibilities brighter, as does the show of oil reported in the Ramsey well.

Most of the leases taken up during the 20's were dropped, and in the last 2 years other companies have moved in and have quietly taken up large blocks in the county which cover some 200,000 acres. The leasing has spread into Dallam and Sherman counties in Texas and in western Texas County, Oklahoma, and some has slopped over into New Mexico. Baca County, Colorado, has also been looked on with favor from time to time in the past and has been tested, but in the present play is believed to have been pretty well left out. The leasing again is on a long-time basis, and the general price has been around 50 cents an acre for a 10-year term with renewals of 50 cents an acre.

Pure Is Leader in Leasing

One of the leaders in the present play is Pure Oil Co., which has assembled at least two important blocks in the eastern part of the county, has "checkerboarded" a large sector between these two blocks and has a large block in the State of Texas. Rumors persist that Pure will drill on one of its blocks within the year, and are given importance because Pure has consistently followed through with thorough testing on areas it has leased up in this manner, notably in the Van pool, Texas, the Cumberland pool, Oklahoma, and in Illinois and Michigan.

Other companies working the area are Gulf Oil Corp. and Stanolind Oil & Gas Co., both of whom have assembled sizable blocks and are making geophysical studies.

The leasing covers large sections in the general northwest-southeast trend of the folding and is widely scattered over the four counties which lie on this tip of the Anadarko basin—Cimarron and Texas counties, Oklahoma, and Dallam and Sherman counties, Texas. The play is obviously for flank production related to the Anadarko basin. The eastern flanks of this great basin have been highly productive at Oklahoma City, and on the south at Cement and Chickasha. As pointed out before, some relation is believed to exist with the Hugoton and Amarillo gas fields, but no conjecture as to what this relation may be has yet been made public.

Judging from previous development of similar areas, such as Southeast New Mexico, it may be years before the area is either proved or condemned, but it is reasonably certain that prospecting of a sort will be carried on for some time.

The 10 wells drilled in Cimarron County in addition to the first Ramsey test are as follows in the order of their date of abandonment:

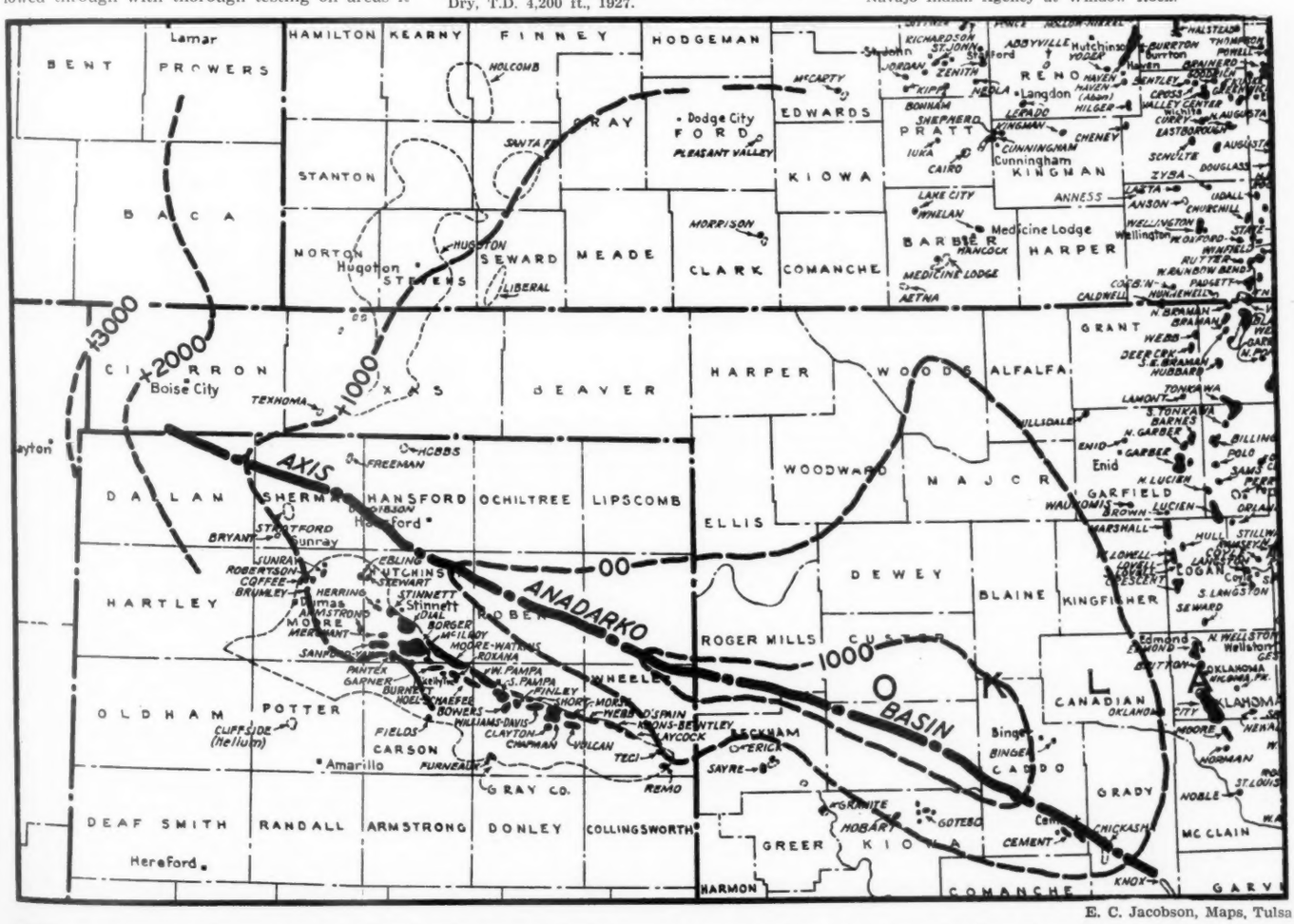
Empire Gas & Fuel 1 School . . SW NW 22-5-5ecm
Dry, T.D. 1,583 ft., abandoned Sept. 17, 1917.
Gladys Belle Oil Co. 1 Israel . . SW SW NE 25-3-7ecm
Dry, T. D. 4,392 ft., small show gas 4,014 ft., some water 4,018 ft., hole full water 4,132 ft., 4,298 ft., and 4,337 ft., abandoned Nov. 5, 1927.
Ramsey 1-C School land . . . . . W½ SE SE 4-5-6ecm
Dry, T.D. 4,200 ft., 1927.
Ramsey 1-D School land . . N½ N½ S½ SE 34-4-1ecm
Dry, T.D. 4,306 ft., abandoned April 13, 1928.
Sinclair 1 School 48 . . . . . NE NE NE 22-5-2
Dry, T.D. 4,872 ft., first hole lost at 1,653 ft., rig skidded 70 ft. north, abandoned 1928.
J. R. Phillips 1 School . . . . . SE SE NE 24-6-2ecm
Dry, T.D. 4,370 ft., abandoned 1928.
Ramsey 2-A School . . . . . NE SW SW 21-5-5ecm.
Dry, T.D. 4,630 ft., coarse granite wash 4,350-57 ft., water 4,357-60 ft., abandoned April 30, 1928.
Magnolia 1 School 11-A . . . . . SE SE NE 22-5-5ecm
Dry, T.D. 4,356 ft., water sand 4,125-40 ft., abandoned July 29, 1929.
Magnolia 1 School 33 . . . . . SE SW NE 27-5-5ecm
Dry, T.D. 4,758 ft., granite wash 4,097-4,103 ft., 42 bbl. salt water in 24 hr., 4,103-06 ft., 1 bbl. oil in 24 hr., 4,248-69 ft., 1 bbl. salt water an hr., abandoned Oct. 17, 1930.
Barnsdall 1 School . . . . . NW SE 35-5-5ecm
Dry, T.D. 5,503 ft., abandoned June 15, 1938.

Leases Near Rattlesnake Field, New Mexico, Offered

WINDOW ROCK, Ariz., June 17.—Bids will be received at the Navajo Agency here June 25 for an oil and gas lease on the reservation in San Juan County, New Mexico, adjacent to the Rattlesnake oil field, E. R. Fryer, general superintendent of the Navajo Reservation, has announced. Total area offered for lease contains approximately 3,720 acres.

The lease is offered for a cash bonus in addition to the stipulated royalties and rentals of $1.25 per acre per year. The minimum bonus accepted must be equal to the appraisement of the representative of th U. S. Geological Survey. The successful and responsible bidder for any lease will be required to pay in advance an annual rental of $1.25 per acre and an approval fee of $5.

A deposit of 20 per cent of the bonus bid and the advance rental for the first year must accompany the bid and be in the form of a certified check or bank draft drawn on a solvent bank payable to M. O. Bickal, Navajo Indian Agency at Window Rock.



E. C. Jacobson, Maps, Tulsa

Relation of the Oklahoma Panhandle to the Anadarko basin and to producing areas to the south and east of the basin are shown above. Detailed subsurface information in the area is lacking, but there has been some drilling in the past

STATE CAPITALS...

PENNSYLVANIA

THE BILL PERMITTING PENNSYLVANIA to join the interstate oil compact has been returned to a house committee for further study. The bill had previously received affirmative vote of the senate. Sponsors of the measure charged that removal of the bill from the house calendar and its return to committee meant that it was being "pickled." Representative Achterman who introduced the motion returning the bill to committee said that it needed amendment and that such consideration could not be given while it was on the calendar.

ILLINOIS

MEMBERS OF AN ILLINOIS SENATE subcommittee June 11 abandoned two pending regulatory measures and began drafting a new bill for immediate passage.

Determination of the subcommittee to press for successful passage of a new control bill came within a few hours after a group of five senators returned from Washington where they conferred with the national petroleum coordinator on the necessity of preventing waste in Illinois.

Before the committee undertook its new task, Senator Carpentier, of East Moline, chairman of the senate gas and oil committee, announced abandonment of two controversial bills before the group which have resulted in a steadily tightening deadlock between rival factions in the state's oil industry.

Discarded were the key administration-supported bill creating a three-man oil commission, which had been submitted May 7 with the approval of Gov. Dwight H. Green; and a bill presented May 22 by opponents which would have placed enforcement of regulatory measures in the state Department of Mines and Minerals.

"I came back from Washington," the committee chairman said, "firm in the belief that the Government wants increased production in Illinois, but not proration or the curbing of market demand. We are determined to cooperate in every way with the Government in order to prepare a simple measure to prevent waste."

"Members of the Illinois Legislature," Mr. Carpentier declared, "should know that Secretary Ickes made it clear that he will deal in the future in his position as national petroleum coordinator either with individual Illinois operators or a recognized state agency.

"He encouraged us to ask for the easiest and fairest kind of a conservation bill that will serve our purposes now, and which can be elaborated upon later."

Chairman Carpentier said the conference with Secretary Ickes was "marked by an unusually friendly and helpful interest in our problems."

He presented the following report to the committee relative to the Washington conference:

"After receiving and conferring with a legislative committee from the State of Illinois, Coordinator Ickes said the state's representatives 'voluntarily offered to do their best to cooperate with the Government in the petroleum emergency.' The committee said that all parties in Illinois are primarily in favor of stopping waste. The problem is how to secure this result.

"Secretary Ickes said: 'The State of Illinois occupies a highly strategic position in the petroleum defense requirements of the nation. Because it is located in the heart of the country close to great central markets, there is no problem of transportation to get the production into the hands of the ultimate consumer. The oil production of Illinois can be used to great advantage at this time when there will be a heavy demand generally on transportation facilities.

"Petroleum Coordinator Ickes told the members of the committee that any legislation they advocated both from the national and the state point of view should, in his opinion, be directed toward stopping waste and not to the stopping of the production of oil.

"He told the committee that he did not intend to offer them a draft of legislation or attempt to dictate in any way what form that legislation should take. That would be a matter for Illinois to decide when properly informed on all facts through its regular legislative process."

CALIFORNIA

CALIFORNIA OIL PRODUCERS, facing the necessity of justifying existing crude postings before July 1 in order to prevent, if possible, the issuance of orders for price reductions, are making a series of surveys to develop lifting and production costs. Detailed questionnaires designed to develop the cost per barrel of producing crude oil in California have been mailed to more than 800 individual companies and operators by the Oil Producers Agency. The questionnaire is modeled after ones used by the federal Government in a similar survey several years ago. Purpose of the questionnaire is to furnish the additional data requested by Leon Henderson, chief of the Office of Price Administration and Civilian Supply. The O.P.A.C.S. first ordered crude and gasoline prices restored to levels prevailing before May 23, date of the last increase, but later postponed the effective date to July 1.

The form developed by H. B. Duchand of Republic Petroleum Co.; D. P. Murdy of Wilshire Oil Co., and W. A. Russell of Seaboard Oil Co., is virtually the same as the one prepared by the Petroleum Administrative Board under the N.R.A. which was used to develop cost data for the years 1931 to 1934, inclusive, and which was issued in booklet form by the Department of the Interior in December 1935. According to information reaching California from Washington, the O.P.A.C.S. will base its action in oil-industry cost determination upon this booklet and hence the present survey, being modeled after the one used in the federal report, will give a direct comparison between costs then and now.

Lawrence Vander Leck, president of the agency, has informed producers, "It is imperative that all operators who are interested in providing the Government with full and complete data, fill out and return the questionnaire to the agency offices as soon as possible. The value of the survey is directly related to the number of companies and operators which are included in its compilations. If we can be enabled to inform Washington officials that the material represents data from every company operating in California there will be no question but that they will give it serious consideration in finally determining their position with respect to California oil prices. Each operator has a personal stake in this matter and each operator should make every effort to include his own cost data in the survey and return it to the agency offices immediately so that it can be compiled into the over-all survey for the entire California oil industry."

CRUDE-OIL PRODUCTION in California 1 day during the past week reached 654,246 bbl. and in doing so broke a record of several years' standing. The state's allotment for June is 575,931 bbl. daily which indicates that operators overproduced on that specific day by 78,315 bbl. This overproduction is more than 10 per cent over the allotment which tends to indicate that the present curtailment program is functioning about 90 per cent efficient. A considerable part of this overage is due to failure of one company in the Coles Levee field to conform with allotments as well as a general overage throughout the state. Dominguez, where operators in the west end of the field are aggressively developing Miocene zones, showed an overage of 9,836 bbl. per day.

This reflects the action of operators in producing to the maximum in order to get production before other wells reach the sand. This zone is rather thin and cannot sustain large town-lot production indefinitely, and thus this condition will probably take care of itself within a relatively short time. Inglewood is also showing an overage and this reflects excess production of operators in the northwest end of the field where Miocene development is taking place. The Wilmington field, where excesses have been chronic due to the refusal of some operators to conform with curtailment, has an excess of 9,832 bbl. per day. The high production recorded by the state reflects what some operators regard as their final fling before the coordinator steps in and regulates production.

KANSAS

ANOTHER ALLOWABLE INCREASE for July is expected to be supported by testimony presented before the Corporation Commission at Wichita, Kans., June 24 by crude-oil producers. The commission has called a statewide hearing for next Tuesday for the purpose of taking testimony upon which next month's proration order will be based.

TEXAS

TEXAS' TOTAL DAILY ALLOWABLE, averaging 1,427,029 bbl. daily, or 4,213 bbl. higher than last week, was resulting in actual production of 5,383 bbl. over the Bureau of Mines estimated market demand, weekly figures of the Railroad Commission showed on Saturday. The 5,383-bbl. overage was arrived at by using the customary 3.5 per cent figure for underproduction of allowables.

West Texas, with a 245,425-bbl. allowable, was 1,517 bbl. daily higher. The next largest increase went to North Texas, which picked up 838 bbl. for a 116,311-bbl. total. Southwest Texas, with 232,372 bbl. daily allowable, was 792 bbl. ahead daily over last week's average. East Texas with 361,228 bbl. remained the same as last week. East Central Texas picked up 421 bbl. for an 82,931-bbl. total. Gulf Coast Texas with 262,005 bbl. was 375 bbl. over last week. West Central Texas gained 180 bbl. for a 48,329-bbl. total. A 90-bbl. gain in the Panhandle put the average there to 78,428 bbl.

TWO BILLS OF INTEREST to the oil industry were passed by the Texas Senate last Friday. One bill, sponsored by Sen. Weaver Moore, authorized the creation of corporations for the several purposes of mining, farming and stock raising. This is to permit farmers and ranchmen to incorporate to continue as such, as well as develop oil and gas on their lands. Sen. Allan Shivers secured the passage of a bill validating river-bed and river-channel oil and gas leases made under the act governing mineral leases on submerged lands. The bill applies the same rental obligations and exemptions as control submerged leases.

McELROY RANCH OPERATORS in Crane County, West Texas, won the first court test in their attack last week against the Railroad Commission proration order applicable to that field. Formal judgment had not been entered but the court held for plaintiffs in their contention that wider spacing entitled them to higher allowables.

OKLAHOMA

MARKET DEMAND for Oklahoma crude oil in July will be determined from testimony presented at the statewide hearing called for June 27. June allowable is 415,000 bbl. daily, the Bureau of Mines' estimate on demand is 459,700 bbl., and the current production is around 420,000 bbl. daily.

the OIL AND GAS JOURNAL

PRODUCING REFINING NATURAL GASOLINE PIPE LINE

Published weekly by The Petroleum Publishing Company at Tulsa, Oklahoma

False Premise

A dispassionate appraisal of comment and thinking emanating from Washington these days leads the observer to believe our solons are veering toward a false and dangerous premise so far as petroleum is concerned. It appears that a doctrine is being promulgated that a large part of petroleum consumption is in the nature of luxury use. This doctrine is being expressed in new taxes, talk of rationing of use, and threats of gasolineless Sundays.

This thinking is undoubtedly a holdover from the days when automobiles were numbered by thousands instead of millions and ownership was limited to the well-to-do. But a breakdown of petroleum consumption today will reveal that very little of it can be considered in the luxury class. As an industry, the oil business furnishes one of the most essential products to maintain the economic and living standards that have been established in this country.

One recent suggestion from Washington is that the family go back to buses and the street railway to save fuel it would use in operating the car. One has only to look at one simple statistic to realize the impracticability of this suggestion. At this time in the average city less than 10 per cent of the population uses the bus or street car, regularly depending on the family car for practically all of its transportation requirements. It is readily apparent that should this suggestion that the population resort to buses and street cars be adopted, it would require several years to expand transportation systems to a point where they could adequately take care of the population's need for transportation to office, school, factory, store, parks, and so on.

Moreover, the trend in recent years, and one that has been given wise encouragement by the Government, is for families to get away from congested areas in cities, and to move into suburban regions where dependence on automobile transportation is greater. Formerly, people had to live near a street-car line, a dependence eliminated by the almost universal use of the automobile in all but the largest cities.

The Government has also been sponsoring the building of new factories away from congested areas, possible only because of the family car. These outlying factories are literally surrounded by automobiles during working hours.

In addition to 26½ million passenger cars in use in the United States, there are 4½ million trucks, or commercial vehicles. To impose restrictions on the use of these vehicles would seriously disturb the economy of the country. Such restrictions would force the use of less economical means of delivery transportation.

Then there are nearly 2 million tractors, mostly in use on farms. These are taking the place of manpower and horsepower, and have materially increased the productivity of American agriculture. Gasoline-powered stationary engines, home-lighting systems operated on gasoline, range and fuel oil have all contributed incalculably to the improvement of the efficiency of home and farm.

It would be the height of folly to attempt to apply European policies to this country, as regards the consumption of petroleum products. Oil has become too vitally enmeshed in the American standard of living to have lawmakers arbitrarily decide that a part of its use is unnecessary. When consumption is restricted, production is restricted, and wheels are put into backward instead of forward motion. No one wants to see such an unwholesome trend as this begun.

In view of this it is meet that the oil industry insist on careful analysis of every governmental action that seeks to restrict the use of petroleum products.

Texas Operators Are Asked To Adjust Production

AUSTIN, Tex., June 17.—Texas operators were warned here Monday that curtailment of production may be compulsory in a short time to adjust for the reduction in transportation capacity to the East Coast.

Jerry Sadler and Olin Culberson, members of the Texas Railroad Commission returned to Austin from a conference in Washington last week with Coordinator Ickes. The commissioners petitioned Mr. Ickes to place a limitation on the amount of oil which American companies might contract from foreign fields.

Mr. Ickes promised to consider the request of the Texas commissioners who urged that such a plan be put into effect immediately and in order that American-produced crude might share in the British market and to a greater extent in domestic requirements.

Warning that the transportation shortage resulting from government transfer of tankers will cause a backing up of oil in Texas was sounded by Mastin Nixon of Corpus Christi, Tex., general manager of Southern Minerals Corp.

"A reduction in output should be made," Mr. Nixon declared, "to prevent this backing up."

He explained that oil from other parts of the state moved to the Gulf Coast and that the problem was state wide. The industry was urged by Mr. Nixon to face the situation from a realistic viewpoint and to take corrective steps before the situation becomes more critical.

Demand for Panhandle crude, which has been in excess of supply at every commission hearing held this year, has not diminished. Operators in that section of the state asked for higher allowable in July and suggested abolishment of one or two of the shutdown days as a means of satisfying their requirements. E. R. Foster of Bartlesville, Okla., attorney for Phillips Petroleum Co., presented a plea for higher Panhandle allowables.

Nominations for purchase of Texas crude oil in July totaled 1,795,023 bbl. daily, a reduction of 10,405 bbl. below the June aggregate. This was the first reduction in indicated purchaser demand in several months.

Dr. H. D. Wilde, in charge of technical research for Humble Oil & Refining Co., put in the hearing record that Humble laboratory research had shown 23 fields yielded low-cold-test crude.

Omission of the Yates pool from his list of fields brought a protest from Ireland Graves, representing Ohio Oil Co. Dr. Wilde contended Yates crude did not meet Humble's standards as to viscosity and sulfur content to rank it as low cold test. Mr. Graves maintained other tests placed Yates crude in the low-cold-test bracket. Low-cold-test qualities of oil is one of the factors in the commission's proration yardstick.

According to Dr. Wilde, his tests revealed low-cold-test crudes in Sugarland, Thompson, Webster, Amelia, Mykawa, Manvel, Magnet, Withers, Pickett Ridge, Clear Lake, Clam Lake, Dyersdale, Esperson Dome, Goose Creek, Hankamer, Hull, Spindletop, Orange, Saratoga, West Columbia, West Beaumont, Hillje and Lost Lake.

H. G. Brown of Mount Pleasant, representing Talco Pipe Line Co. and other Talco operators, wanted the allowables there raised from 33 bbl. per well to 38 to take care of demands for the asphalt-type crude to be used in national defense.

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Sunday Driving Banned 45 Days in World War Era

By J. P. O'DONNELL

NEW YORK, June 16.—Gasolineless Sundays, suggested as a possible remedy for the anticipated East Coast shortage of oil supplies, were adopted for a short period during the World War. The cause of the shortage then was inadequate crude-oil supplies whereas today there is an abundance of crude and the shortage will result from the withdrawal of tankers from coastwise service.

An order forbidding the use of gasoline in any form of pleasure driving on Sundays and holidays beginning Sunday, September 1, and including Labor Day was issued August 27, 1918, by Oil Director M. L. Requa. The order followed a study by the National Petroleum War Service Committee which found that the gasoline shortage at that time equaled the average consumption for 11 Sundays and holidays. Physicians' cars, ambulances, fire trucks, police cars, public utility repair trucks and trucks engaged in essential transportation services were excepted.

The order affected only the area east of the Mississippi where there was an estimated total of 2,825,400 cars in operation. It was estimated that 5,000,000 gal. would be saved each day that the ban was in effect. However, just before the order was terminated on October 15 after having been in effect seven Sundays and one holiday, Mr. Requa estimated that 25,000,000 gal. had been saved.

When the ban was lifted a patriotic appeal was made to motorists to conserve gasoline. It was hoped by this means to effect a saving of from 15 to 20 per cent and "unless it is," it was officially stated, "rationing will be required on the basis of essentiality."

The ban was adopted after a mounting gasoline shortage reached a peak in August 1918. A daily deficit of 20,000 bbl. was reported for April, May and June, 1918, 44,000 bbl. in July and 65,000 bbl. in August. In a report to the Senate early in September of that year, Van H. Manning, director of the Bureau of Mines, said: "We are not now producing enough crude to supply our refineries and gasoline stocks have been reduced to 2 to 3 weeks' supply." He said that runs had increased from a daily average of 863,374 bbl. in 1917 to 874,964 bbl. in 1918 and that in July 1918, they were up to 940,996 bbl., an increase of 77,617 bbl. from July 1917.

In the latter part of 1918 the Petroleum War Service Committee adopted a stabilization plan for the allocation of crude oil. As a result of this plan, Mid-Continent gasoline production rose and this increase coupled with the saving effected by the Sunday ban was sufficient to meet the shortage.

A fuel-oil shortage was also felt and its use under oil-field boilers was prohibited. The Bureau of Mines cited the wasteful use of fuel oil and estimated its extent, due to the inefficiency of burners and other causes, at 40,000,000 bbl. annually. A shortage of steel threatened drilling and concrete storage and barges were adopted.

On October 1, 1918, all branches of the industry doing an annual business in excess of $100,000 were licensed in order to make possible the control of all sales and prices.

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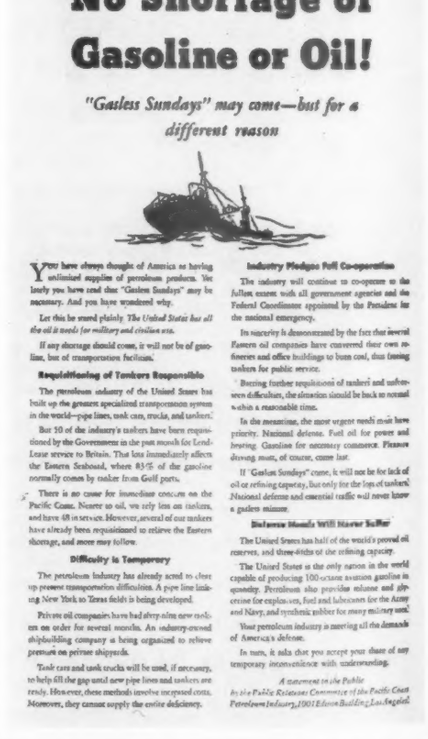
Ickes Moves to Prevent Shipment to Japan

WASHINGTON, D. C., June 16.—Coordinator Ickes today took steps to prevent the export of petroleum products from East Coast ports by requesting Treasury Department and Office of Export Control to investigate reports the Japanese vessel Azuma Maru is in Philadelphia to load 250,000 gal. of low-grade lubricants.

Customs and Coast Guard officials suggested to sellers in Philadelphia that it might be imprudent to load this cargo in view of possibility that it might be necessary to unload before tanker sails, and that shippers agreed. Action was not based on international situation but purely on potential shortage of oil products at Atlantic ports. Investigation by Office of Export Control may indicate general restrictions on export of petroleum from East Coast. Secretary Ickes action was prompted by a number of telegraphic protests from Philadelphia over news that the Japanese tanker was preparing to load lubricants when the East is threatened with shortage.



No Shortage of Gasoline or Oil!

"Gasless Sundays" may come—but for a different reason

You have always thought of America as having unlimited supplies of petroleum products. Yet lately you have read that "Gasless Sundays" may be necessary. And you have wondered why.

Let this be stated plainly. *The United States has all the oil it needs for military and civilian use.*

If any shortage should come, it will not be of gasoline, but of transportation facilities.

Requisitioning of Tankers Responsible

The petroleum industry of the United States has built up the greatest specialized transportation system in the world—pipe lines, tank cars, trucks, and tankers.

But 10 of the industry's tankers have been requisitioned by the Government in the past month for Lend-Lease service to Britain. That loss immediately affects the Eastern Seaboard, where 85% of the gasoline normally comes by tanker from Gulf ports.

There is no cause for immediate concern on the Pacific Coast. Nearer to oil, we rely less on tankers, and have 48 in service. However, several of our tankers have already been requisitioned to relieve the Eastern shortage, and more may follow.

Difficulty Is Temporary

The petroleum industry has already acted to close up present transportation difficulties. A pipe line linking New York to Texas fields is being developed.

Private oil companies have had sixty-nine new tankers on order for several months. An industry-owned shipbuilding company is being organized to relieve pressure on private shipyards.

Tank cars and tank trucks will be used, if necessary, to help fill the gap until new pipe lines and tankers are ready. However, these methods involve increased costs. Moreover, they cannot supply the entire deficiency.

Industry Pledges Full Co-operation

The industry will continue to co-operate to the fullest extent with all government agencies and the Federal Coordinator appointed by the President for the national emergency.

Its sincerity is demonstrated by the fact that several Eastern oil companies have converted their own refineries and office buildings to burn coal, thus freeing tankers for public service.

Barring further requisitions of tankers and unforeseen difficulties, the situation should be back to normal within a reasonable time.

In the meantime, the most urgent needs must have priority. National defense. Fuel oil for power and heating. Gasoline for necessary commerce. Pleasure driving must, of course, come last.

If "Gasless Sundays" come, it will not be for lack of oil or refining capacity, but only for the loss of tankers. National defense and essential traffic will never know a gasless minute.

Reserves Should Still Meet Sales

The United States has half of the world's proved oil reserves, and three-fifths of the refining capacity.

The United States is the only nation in the world capable of producing 100-octane aviation gasoline in quantity. Petroleum also provides toluene and glycerine for explosives, fuel and lubricants for the Army and Navy, and synthetic rubber for many military uses.

Your petroleum industry is meeting all the demands of America's defense.

In turn, it asks that you accept your share of any temporary inconvenience with understanding.

A statement on the Public by the Public Relations Committee of the Pacific Coast Petroleum Industry, 1901 Edison Building, Los Angeles

This copy appeared in 14 papers in California, and called attention to the fact that should gasolineless Sundays come, it will not be because of a shortage of product, but because of transportation difficulties

International

Venezuela . .

Highest Production Since June 1940 Shown in April

THE highest daily average production registered by Venezuela since June 1940 was reported in April when the yield was 561,436 bbl. daily. The increase of 44,200 bbl. in the daily average production in April over March is a gain of 8.5 per cent. Nearly 26,000 bbl. of the daily average increase in production was supplied by fields in the Lake Maracaibo district, including Cabimas, Lagunillas, Tia Juana and Bachaquero.

Cumarebo, one of the older high-gravity fields in the northern part of the country, nearly doubled its March production in April. Stimulated production from Venezuela reflects the turn of the United Kingdom to the Western Hemisphere for a greater portion of its petroleum requirements.

VENEZUELAN CRUDE-OIL PRODUCTION

By Companies

	March	April
Caribbean Petroleum Co.	924,690	899,260
Venezuelan Oil Concessions, Ltd.	3,293,580	3,266,285
Colon Development Co.	429,570	400,295
Lago Petroleum Corp.	4,976,620	5,702,990
Mene Grande Oil Co.	3,786,410	3,739,340
British Controlled Oilfields, Ltd.	19,400	17,690
Central Area Exploitation Co.	46,345	44,535
Standard Oil Co. of Venezuela	2,517,510	2,738,550
Compania de Petroleo Lago	23,545	18,170
Socony-Vacuum Oil Co.	11,285	8,980
Texas Co. (Venezuela) Ltd.	2,030	2,540
Cia. Consolidada de Petroleo	3,285	2,580
Orinoco Oil Co.	.....	1,885
Total	16,034,270	16,843,100

By Fields

Cabimas	1,805,715	1,974,605
Lagunillas	4,251,075	4,680,985
Tia Juana	3,749,820	3,824,790
Bachaquero	24,075	21,360
La Concepcion	60,550	58,880
La Paz	38,255	34,565
Mene Grande	924,690	899,260
El Cubo (Tara)	429,570	400,295
Cumarebo	80,380	153,920
Las Palmas	1,300	2,190
El Mene de Mauroa	19,400	17,690
Hombre Pintado	46,345	44,535
Distrito Mara	.....	1,885
Quiriquire	1,625,675	1,733,865
Pedernales	134,115	129,235
Temblador	307,330	278,470
Oficina	1,828,170	1,790,325
Jusepin	417,905	447,190
Santa Ana	305	10,600
San Joaquin	152,260	186,055
El Roble	94,970	114,610
Leona	940	1,140
Guario	11,280	8,980
Santa Rosa	24,600	22,550
Los Caritos	2,030	2,540
Santa Barbara	3,285	2,580
Las Ollas	180	.....
Total	16,034,270	16,843,100

Orinoco Oil Co.'s Mara district made its first appearance in the list of shipping oil fields in April with yield of 1,885 bbl.

In addition to the Lake Maracaibo fields reporting higher production in April the following also qualified for this classification: Las Palmas, Mara, Quiriquire, Jusepin, Santa Ana, San Joaquin, El Roble, Leona and Los Caritos.

Fields producing less oil in April than in March, but not necessarily at a lower daily average rate, included: Bachaquero, La Concepcion, La Paz, Mene Grande, El Cubo (Tara), El Mene de Mauroa, Hombre Pintado, Pedernales, Temblador, Oficina, Guario, Santa Rosa, Santa Barbara and Las Ollas.

The Santa Ana field, west of El Roble and San Joaquin in the State of Anzoategui gave first evidence in April of development into a substantial field. Production from Santa Ana averaged more than 300 bbl. daily in April. The area was originally a source of much of the gas used in drilling operations in the central part of Anzoategui but April's report indicates that it has been converted into a substantial crude reserve.

THE Texas Co. (Venezuela) Ltd., is testing after having perforated casing in 2 Rincon Largo. The total depth of this well is 9,631 ft. Derrick has been completed for 3 Rincon Largo, approximately 1 mile northeast of the No. 1. S. A. Petrolera Las Mercedes 1 Mercedes, a wildcat test, was plugged and abandoned at 6,232 ft.

PANTEPEC Oil Co. of Venezuela has completed negotiations for a loan of $1,000,000 and later will make another for the same amount. The first loan will be used in part to pay a $500,000 existing loan which matures this month and the second will be used for corporate purposes principally to defray the company's share of drilling expenses incurred in developing Venezuela properties jointly with Standard Oil Co. of Venezuela.

Iraq . .

Oil Deliveries to Port Of Haifa Are Resumed

DELIVERIES of Iraq petroleum were reported resumed last week through facilities of Iraq Pipe Line Co. to the eastern Mediterranean port of Haifa. Deliveries were halted during the 3 weeks of fighting between British and Iraqi troops.

Brazil . .

Exploratory Operations Continued in Brazil

THE prospecting and drilling campaign being carried on in Brazil by Conselho Nacional de Petroleo has yet to discover oil outside the Lobato, Bahia, area where production has not yet reached a commercial scale. Drilling is under way at Bahia, Maceio, Alagoas and in the Acre territory but productive possibilities are so far limited to Lobato.

Argentina . .

Government Company Increases Production

YACIMIETOS PETROLIFEROS FISCALES, the Argentine Government oil company, increased its production more than 20 per cent during the first 3 months of this year compared to the same quarter in 1940.

Output by Y.P.F. properties during the first quarter of this year totaled 3,399,870 bbl., an increase of 574,905 bbl., compared to the same 1940 period.

Most of the increase is coming from the Province of Mendoza.

Colombia . .

Court Asked to Terminate Contract With Tropical

THE Supreme Court of Colombia has been asked for a judgment ruling that the Tropical Oil Co.'s De Mares concession will expire on June 14, 1946. Petition for such a ruling was filed with the court early this month by Dr. Carlos J. Medellin, Colombian Solicitor General for Civil Matters.

Tropical Oil Co., a subsidiary of International Petroleum Co., Ltd., which in turn is affiliated with Standard Oil Co. (New Jersey), produces about 20,000,000 bbl. annually. The De Mares concession covers approximately 1,300,000 acres in the district of Santander in the Magdalena River Valley.

Production from the Tropical concession is moved to Barranca-Bermeja, where a refinery, tank farm, and loading terminal are located through a 350-mile pipe line owned and operated by Andian National Corp., Ltd.

The company's concession was granted in 1905. Dr. Medellin's petition claims that terms of the agreement provide that upon expiration in 1946 all properties should pass into the hands of the Government of Colombia.

The La Cira and Infanta fields, both in the concession involved in the court petition, contain about 750 producing wells with less than 75 capable of flowing naturally.

U. S. S. R. . .

Production Fails to Equal Planned Output

THE Soviet oil industry as a whole failed to attain its production goal in 1940, according to the Soviet press. However, functioning of the petroleum industry during the final quarter of 1940 recorded considerable improvement over that of preceding quarters of the year, primarily due to better operation of the Baku (Azerbaidzhan) oil fields. The Grozny fields also showed a slight improvement toward the close of the year, and succeeded in checking a continuous 4-year decline in output.

The total output of crude oil was somewhat above that of 1939, but far below the plan provisions. Oil fields of the second Baku region produced considerably less crude oil than in 1939. The output of the Maikop and Emba fields was also below the actual production level of the preceding year. The Baku and Grozny oil fields increased output, while production in the remaining districts was more or less on the level of 1939. Oil-refining plants of the Baku district have shown satisfactory results during 1940, while those of other districts, and particularly those of Grozny, have lagged.

The general operation of the Soviet oil industry in 1940 has been characterized by the trade press as unsatisfactory. Failure of the petroleum industry to show satisfactory progress, as well as other considerations, caused authorities to introduce the rationing of petroleum products in the U.S.S.R. near the close of the year.

Chemical soldiers born of crude oil

are ready to defend the nation

THEY are the offspring of petroleum by processes conceived in the brains of research chemists, developed in laboratory study and experiment, tested and proved in pilot plants and adapted by master engineers to produce on a giant scale products never before derived from petroleum—chemical soldiers

They are on the march now

Who are these chemical soldiers?

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Dubbscracking	Polymerization
Pyrolytic reforming	Isomerization
Catalytic cracking	Cyclization
Catalytic reforming	Aromatization
Alkylation	Hydrogenation
Dehydrogenation	

Strange names? Yes, most of them are new even in the language of the oil industry

But the processes they represent are mighty important to the defense of this country—and all are available to all refiners through Universal

At the nation's service

Universal Oil Products Company

Chicago, Illinois

Illinois Crude Oil Used By 47 Refineries

ILLINOIS crude-oil production finds its way to 47 refineries in 11 middle western and eastern states and Canada, a recent survey shows. Approximately 335,000 bbl. of the daily output is delivered by pipe lines with the other 10,000 bbl. being delivered by truck and tank car. Major oil companies refine 271,000 bbl. of the state's total output while independent refineries handle approximately 74,000 bbl. daily.

Illinois leads in refining its own crude with 10 independent plants and 5 major-company refineries. Ohio is second with seven major-company plants and four independent terminals. Kentucky is third with four independent users and one major-company refinery. Indiana has four plants using Illinois crude, New York has two plants, and New Jersey, Michigan, Wisconsin, Pennsylvania, Missouri, and West Virginia each have one refinery operating at least partially on oil produced in Illinois. Canada has four plants which depend to a great extent on the Illinois oil.

Plants receiving shipments of Illinois crude oil follow:

Illinois: Indiana Refining Co., Lawrenceville; Ohio Oil Co., Robinson; Shell Oil Co., Inc., Wood River; Standard of Indiana, Wood River; Texas Co., Lockport; Allied Refining Co., St. Elmo; Advance Refining Co., Centralia; Cascade Refining Co., Selmaville; Cross Refining Co., Dupo; Globe Oil & Refining Co., Lemont; Pana Refining Co., Pana; Richer Refining Co., Quincy; Taxman Oil Co., Milan; Egyptian Refining Co., Centralia, and Wood River Oil & Refining Co., Hartford.

Ohio: Gulf Refining Co., Cincinnati; Pure Oil Co., Heath and Toledo; Standard Oil Co. of Ohio, Lima, Cleveland, and Toledo; Sun Oil Co., Toledo; Allied Oil Co., Cleveland and Bayshore; Canton Refining Co., Canton, and National Refining Co., Findlay.

Kentucky: Latonia Refining Co. (Standard of Ohio), Latonia; Aetna Oils, Inc., Louisville; Ashland Oil & Refining Co., Catlettsburg; Stoll Refining Co., Louisville, and Louisville Refining Co., Louisville.

Indiana: Cities Service Oil Co., East Chicago; Johnson Oil & Refining Co., Gary; Evansville Refining Co., Evansville, and Troy Refining Co., Troy.

Canada: Imperial Refining Co., Sarnia; McColl-Frontenac Oil Co., Ltd., Montreal; British American Oil Co., Toronto, and Canadian Oil Co., Ltd., Petrolia, Ont.

New York: Socony-Vacuum Oil Co., Inc., Buffalo, and Frontier Fuel Oil Co., Harriett.

Other refineries receiving shipments of Illinois crude are Standard Oil Co. of New Jersey, Bayway, N. J.; Socony-Vacuum Oil Co., Inc., Trenton, Mich.; Wisconsin Refining Co., Sheboygan, Wis.; Freedom Oil Co., Freedom, Pa.; Hercules Oil & Refining Co., St. Louis, Mo., and Elk Refining Co., Falling Rock, W. Va.

Part of the oil shipped to Bayshore, Ohio, is stored for reshipment to refineries in Canada and the eastern United States but the exact destination is not known.

William F. Humphrey (center), president of Tide Water Associated Oil Co., handing company check to Albert M. Goldman, New York postmaster, and receiving 10,019 postal savings $1 stamps to be presented by the oil company to its employes. Bert I. Graves, vice president of the company, looks on.

DEATHS

DOW DUNAWAY, veteran land man for Magnolia Petroleum Co., at Wewoka, Okla., died last week from a stroke.

LAPSLEY NEAL, 53, pioneer Oklahoma oil man, died last week at his home in San Antonio, Tex., of a complication of diseases. He had been active in Oklahoma oil fields for many years, but later made his home in San Antonio.

CLIFTON JAMES HASLETT, 68, retired employe of United Natural Gas Co., died at Guitonville, Pa., June 11, after several months' illness. He had followed the oil and gas industries all his adult life and was field foreman for United Natural Gas in the Guitonville district from 1916 until his retirement in 1939. He is survived by his wife, five sons and four daughters.

MICHAEL JOHN KEATING, 47, well-known National Transit Pump & Machine Co. employe, and veteran of the World War, Oil City, Pa., died at an Oil City hospital, June 12. Mr. Keating had been with the company for the past 29 years, and was a valued employe. He had been ill only 4 days. He was born at Kinzua, Pa., in 1894, and had been a resident of Oil City since he was 14 years old.

JOHN M. COOPER, 53, San Angelo, Tex., opener of the Page gas field in Schleicher County, Texas, in 1935, and chairman of the Cooper Gas Co., died in an Amarillo, Tex., hospital June 12. He had been suddenly stricken ill and died soon after admission to the hospital. Mr. Cooper had developed leases in the Cat Creek and Shelby fields, took part in oil business in California in 1920, and moved to San Angelo in 1933.

M. H. HANDERHAN, 84, who is said to have drilled the first oil well in Kane, Pa., died June 8 at his home in Kane. He had been ill for some time and death was due to complications and old age. His wife and a son survive.

W. S. MUSSELWHITE, oil man of Tyler, Tex., died in a hospital in Taylor, Tex., June 12, from injuries suffered in an automobile accident.

LOUIS PETTIT, 36, died of electrocution June 14 on an oil lease at Indian Creek, near Olean, N. Y. He was pronounced dead when he was admitted to an Olean hospital. He was engaged in mooring a guy wire, which came in contact with a high-tension wire. The shock hurled him several feet.

GEORGE ROSCOE McKINLEY, 85, died at Bradford, Pa., last week following what was diagnosed as an attack of indigestion. Born in Pittsfield, Pa., in 1855, he joined the John McKinney Oil Co., which later was absorbed by Standard Oil Co., and still later became a part of South Penn Oil Co. He was superintendent for South Penn in the Bradford, Eldred and Warren fields for a time after the consolidation.

FLETCHER S. PRATT, 81, president and principal stockholder of the State Fuel Supply Co., was found dead in his apartment in Oklahoma City, Okla., June 8. Death was attributed to heart failure. Mr. Pratt had worked as a boy in the discovery oil field at Titusville, Pa., and had pioneered the development of the industry in Ohio, Kentucky and West Virginia. For several years he was manager of the Ohio Fuel Oil Co. in Charleston, W. Va., before going to Dallas, Tex., in 1918, and to Oklahoma City in 1923 as district manager.

THE MARKETS*

CRUDE OIL: Sharp competition for Mid-Continent crude connections continues. Texas conditions are less satisfactory since diversion of tankers threatens to restrict the amount of crude and products that can be moved to the northeast. Key to the outlook for crude markets is in the hands of the Office of Price Administration and Civilian Supply which has the California problem to settle between now and July 1.

REFINERY: Northeastern markets are particularly strong. Some suppliers were reported this week receiving premiums for ability to make prompt delivery. Mid-Continent refiners were pressed to meet shipping instructions accumulated for June 11 and later loading. Manufacturers of Mid-Continent lubricating oil are behind on orders and are limiting shipments in an effort to supply needs of all customers.

TANK-WAGON AND POSTED-DEALER: Reductions were made at all normal marketing points in the Middle West, passing along freight savings to consumers. A general advance of 0.25 cent was announced effective June 6 in the South Atlantic states and Tennessee prices were raised 0.5 cent. Pennsylvania gasoline prices were advanced 0.5 cent. Markets elsewhere were steady and unchanged.

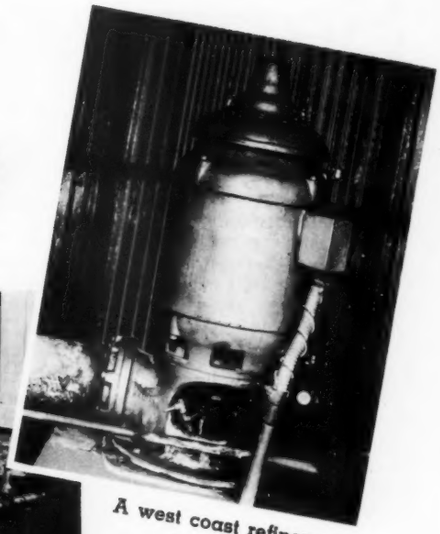
FINANCIAL: Securities staged a sustained drive to higher ground. Average of 30 representative stocks for week ended June 14: High, 25.35; low, 24.37; close, 25.12. Week ended June 7: High, 24.80; low, 23.85; close, 24.46.

*Detailed information in market section.

A west Texas "wildcat."

All the Way

An east Texas pipe line station.



A west coast refinery.

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Service on Active Fields

Abell Field, Northern Pecos County, West Texas

Compiled by The Oil and Gas Journal

Geographic location

In extreme northern Pecos County, West Texas, and about 10 miles south of Grand Falls in Ward County. Other towns in the area are Abell City, 1 mile south (a new proposed townsite in N½ Section 6, Block 3, H.&T.C. Survey); Imperial, 2 miles southwest; McCamey, about 40 miles southeast; Monahans, about 36 miles north and slightly west; and Odessa, about 60 miles northeast.

Location of supply houses

Many companies are opening supply centers at either Imperial or Abell City and some at Buena Vista, 4 miles southeast of the field. Long-established West Texas supply centers are located at Monahans, Grand Falls, McCamey, Odessa, Midland, and other nearby larger towns. Most material is sent by rail to Monahans and hauled south to the field.

Trucking and hauling facilities

Most general field hauling and teaming is obtainable from the nearby small towns; however, heavier hauling is contracted from the larger centers to the north and east of the field.

DEVELOPMENT

Early development

The discovery well, Taubert-McKee-Siemoneit Drilling Co. 1 Crockett, located in Lot 4, Section 4½, Block 3, H.&T.C. Survey, was gaged flowing 933½ bbl. of oil in 11½ hours on November 18, 1940. Production was from a sandy lime section in the Simpson (Lower Ordovician) from 5,270 to 5,357 ft. The discovery was about 1½ miles south and slightly east of Magnolia and Tex-Mex Oil 1-A McKee, a wildcat failure of 2 years previous which had definitely shown the presence of oil in the Simpson lime.

Early lease expiration led to the drilling of the discovery, with considerable bottom-hole money and much acreage contributed by companies to the drilling of the well. Shortly after development began in the field, the discovery firm sold its well and acreage in the area to Stanolind Oil & Gas Co. which now has several tests drilling in the field.

Subsequent development

There are 11 completed wells in the field, one of which opened a new deeper pay still in the Simpson section. This discovery was the Magnolia 1 State-Sharp, located in Lot 3, Section 22, Block 9, H.&G.N. Survey, about 1½ miles northwest of the discovery well. It gaged 92 bbl., pumping, daily, from 5,920-45 ft. The well topped the Simpson at 4,835 ft. and the Tulip Creek member at 5,170 ft. To date no other wells in the field have drilled to this lower pay. Many outpost locations from ½ mile to 3 miles out were staked early in the field's development, all due to coming lease expiration.

Seven rigs are active in the field and six additional locations have been staked.

Production and proration

The field is prorated on a basis of 60 per cent for acreage and 40 per cent per well. The 10 shallower wells have allowables of 46 bbl. each. The deep discovery has an allowable of 90 bbl., making a total daily production of 550 bbl. for the field.

Spacing pattern

The Railroad Commission ruling for the field is for a 20-acre spacing pattern with a 40-acre optional pattern. Although some companies are attempting to limit development to the 40-acre plan, present wells and their drilling offsets indicate that the greater portion of the field will be drilled with one well on each 20-acre tract. The acreage is divided into small irregular tracts forcing unitization for many tracts under the 40-acre plant. Some of the larger tracts may be developed under the wide-spacing program.

PRESENT OWNERS OF PRODUCING WELLS

Name—	No. wells
Magnolia Petroleum Co.	6
Sinclair Prairie Oil Co.	2
Stanolind Oil & Gas Co.	1
Phillips Petroleum Co.	1
Stanolind and Anderson-Prichard	1
Total	11

GEOLOGY

Method of field's discovery

Three factors dictated drilling of the discovery well in the area. First, the existence of a regional structure believed favorable to production from the Lower Paleozoic. Second, Magnolia and Tex-Mex 1-A McKee, although abandoned, established the fact that oil was present in the immediate vicinity. Third, leases on at least three-fourths of the acreage were about to expire. This third reason brought about donations of both acreage and money toward the drilling of the discovery.

General geology of the field

The field is on a definite high perceptible on all major beds from the surface to the producing horizon. This was known even previous to the discovery well by correlations of the many shallow failures and the few deep ones then drilled. This hight is thought to be on a new deep trend approximately paralleling regular Permian lime production in West Texas and is located about midway between the so-called east and west-rim Permian production of the basin itself. It embraces such deep fields as Apco, Abell, and Sand Hills.

The upper or regular pay level in the field is a sandy lime zone in the upper part of the Simpson section, while the deeper pay level is from a sand body in the lower part of the Simpson, possibly near or at its contact with the Ellenburger lime. The producing horizons in all of the wells now completed have been topped at irregular depths, leading some geologists to the opinion that either faulting or folding of the Simpson series is prevalent on the flanks of the resistant Ellenburger lime responsible for the structure in the area. The absence of the Simpson section in Stanolind 1 Conry-Davis, 4 miles east of the field, suggests that the Simpson section may be missing over the crest of the high.

FUTURE DRILLING

Proven area

Present production has proven some 1,800 to 2,000 acres. The field has not yet been defined by dry holes since a well has been completed north of the early failure, thereby placing it within the proven area of the field.

Undrilled locations in proven area

There are 34 undrilled locations in the 1,800-acre proven area based on 40-acre spacing. Under 20-acre spacing there are 79 proven locations to be drilled.

DRILLING CONDITIONS

Type of equipment used

Most contractors in the field are drilling with diesel-powered rigs and using 122-ft. derricks.

Water in the field

Water is obtainable from a shallow sand at from 60 to 80 ft., but this is not suitable for direct use owing to the presence of sulfates. It can be treated chemically. Some water is hauled into the field.

Casing program

Surface casing of 13-in. o.d. is set 50 ft. below the Rustler lime or at about 400 to 475 ft. The 9⅝-in. intermediate string is set anywhere from 2,850 to 3,000 ft. and even as shallow as 1,500 ft. in one well. Open hole is carried from the seat of the intermediate string to the top of the producing horizon below 5,000 ft.

Drilling mud

Drilling mud is from 10.5 to 11.8 lb. per gal. in weight as several gas sands are found in the open hole below the 9⅝-in. casing, all of which respond to the bit with a considerable "kick."

Type bits used

Rock bits are used from the surface down; a minimum of 45 and a maximum of 56 have been used thus far.

Drilling time

The discovery well was drilled in 91 days. Subsequent wells have been drilled in a minimum of 60 days which, it is believed, will be about normal for the field.

Drilling costs

Prices of from $5 to $6 per foot with extras for cores, drill-stem tests and day work are about average for the field. These extras average about $1 per foot more.

DRILLING PROBLEMS

The main problem, over and above the fact that most of the hole is made through hard limes, is the numerous gas zones found between the seat of the intermediate string of casing and the top of the producing horizon. Gas kicks have been registered at 3,125, 3,300, 3,400, 3,500, 3,620, 3,845, and about 3900 ft.

PRODUCING PRACTICES

All wells are flowing with the exception of the deeper 5,900-ft. discovery on the west side of the field. They flow through tubing and into separator with the choke for well control at the separator in most cases.

PIPE-LINE OUTLET

All oil marketed thus far has been hauled north to Gulf Pipe Line Co.'s station at Monahans. Magnolia has erected a large 50,000-bbl. storage tank on its acreage and is running oil into storage. Several possible outlets have been planned.

GAS-OIL RATIO

Gas-oil ratio permitted in the field is 2,000/1.

STANDARD HEMPEL DISTILLATION

Crude From Taubert, McKee & Siemoneit 1 V. Crockett, Simpson Sand, Pecos County, Texas. Sample No. 1426. Depth 5,270-5,280 Ft.

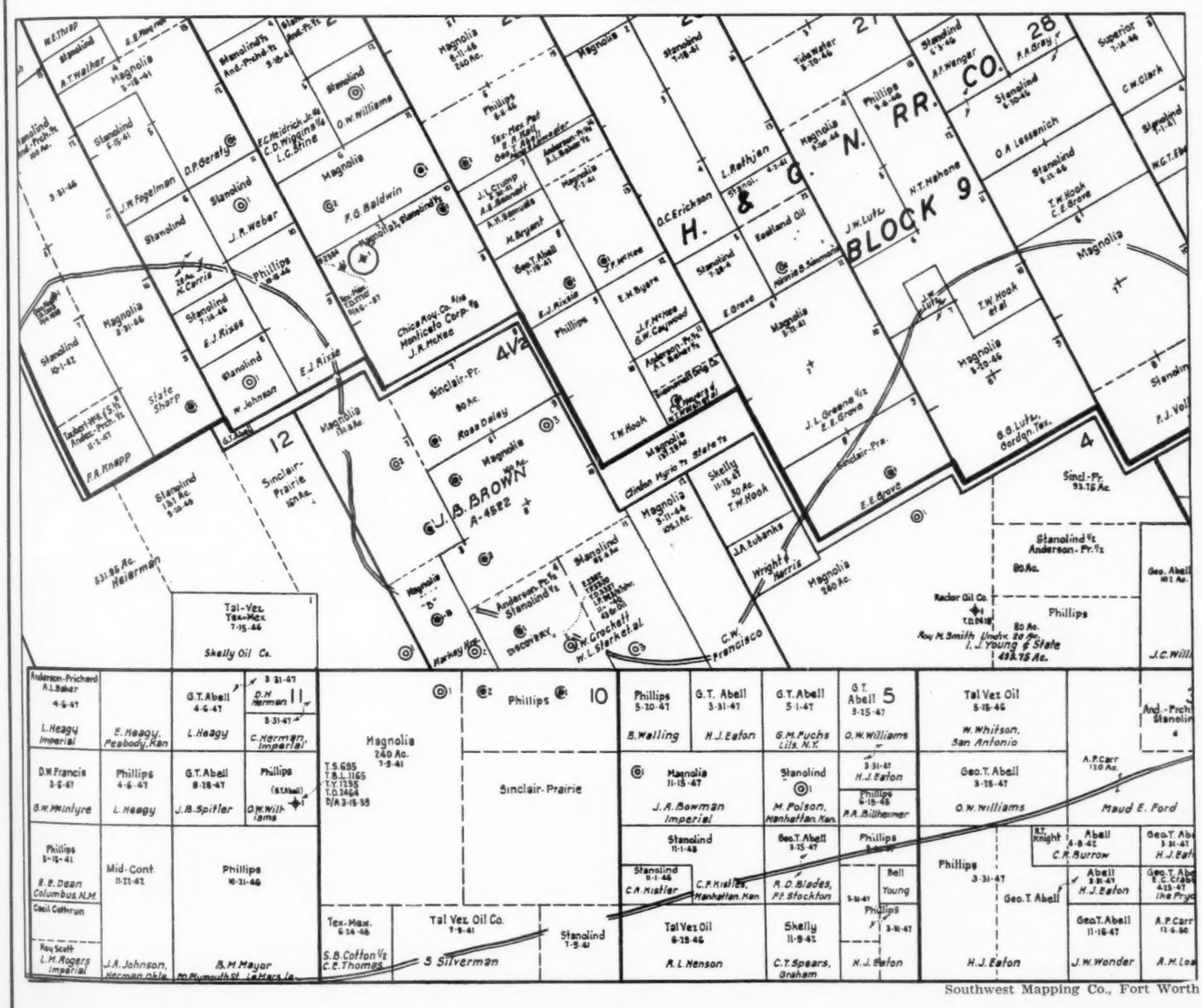
Stocks—	Gasoline	No. 2 fuel	Residuum	Loss
Yields, per cent	29.0	33.4	37.3	0.3
Gravity, °A.P.I.	67.3	45.4	25.9	..
Flash, °F., C.O.C.	..	..	375	..
Color, A.S.T.M.	30	..	..	..
Pour, °F.	..	0	..	..
Viscosity at 100° F., S.U., seconds	..	35	..	..
Viscosity at 210° F., S.U., seconds	..	..	58	..
Sulfur, per cent	0.03	0.05	..	..
Octane No., R-39	25.0	..	..	..
I.B.P., °F.	104	380	..	..
10 per cent	159	412	..	..
20	185	430	..	..
30	207	445	..	..
40	226	461	..	..
50	244	479	..	..
60	262	498	..	..
70	280	518	..	..
80	300	542	..	..
90	326	570	..	..
E.P., °F.	575	620	..	..
Recovery, per cent	98	98	..	..

Physical Tests on Crude

Gravity, °A.P.I.	42.7	30 per cent	395
Viscosity at 100° F., S.U., sec.	38	40	464
Sulfur, per cent	0.13	50	533
B.S., per cent	0.6	60	605
I.B.P., °F.	136	70	687
10 per cent	222	Per cent at 700° F.	76
20	312		

Yields From Standard Hempel Distillation

	Per cent		Per cent
Gasoline (375° F., E.P.)	29.0	Loss	0.3
No. 2 Fuel	33.4		
Residuum	37.3	Total	100.0



Natural Gasoline

Natural-Gasoline Output and Stocks Show Gain in April

Production of natural gasoline increased in April 1941 to a daily average of 6,972,000 gal., according to the monthly report released by the Bureau of Mines. This daily average compared with 6,660,000 gal. in the preceding month and 6,180,000 gal. in April 1940. The chief gains occurred in the Texas Panhandle, East Texas field, and in other parts of eastern Texas. The Panhandle produced a total of 24,168,000 gal. in April as compared with 22,907,000 gal. in March, while comparable figures in East Texas were 14,311,000 gal. and 13,211,000 gal., and for the Texas Gulf Coast, 20,966,000 gal. and 20,588,000 gal.

Production reported for the various districts during April, in gallons, was: Appalachian, 7,140,000; Illinois, Michigan, and Kentucky, 4,872,000; Oklahoma, 31,117,000; Kansas, 5,674,000; Texas, 92,715,000; Louisiana 9,858,000; Arkansas, 2,876,000; Rocky Mountain, 8,161,000; California, 46,747,000.

Stocks of natural gasoline again increased, amounting to 231,168,000 gal. on hand April 30, 1941, compared with 223,902,000 gal. on March 31 and 256,704,000 gal. on April 30, 1940. During the month stocks of naturals at refineries dropped from 106,218,000 to 101,598,000 gal., while stocks at plants and terminals increased from 117,684,000 to 129,570,000 gal.

Shipments to refinery-owned bulk plants and to jobbers and retailers decreased 714,000 and 4,410,000 gal., respectively, from March 31, 1941. Exports increased from 84,000 gal. in March to 2,310,000 in April. The average vapor pressure increased for all shipments except that for exports. The weighted average for the month was 20.1 lb. compared with 19.8 lb. in March and 19.3 lb. in April 1940.

Warren Purchases Cars to Handle Liquefied Gases

Purchase of 30 additional Class 105A-300W tank cars by the Warren Petroleum Corp. for service in its LP-gas division has been made. Delivery of the cars will begin within 60 days. Less than a year ago 84 new tank cars of this type were purchased. Completion of delivery of the 30 new cars will bring the fleet total to approximately 135. Enlargement of Warren's LP-gas tank car fleet has resulted from the fast growth of that phase of the corporation's activities in the middle and Southwest, and South and Southeast.

CALIFORNIA NATURAL GASOLINE ASSOCIATION HOLDS FROLIC

This year's annual frolic of the California Natural Gasoline Association was held June 7 at the Riveria Country Club in Santa Monica, Calif. Shown in the Riveria lounge after the annual golf game are (back row, left to right): Jack Delaney, Reliance Manufacturing Co.; J. R. Delaney, Cincinnati Gas & Electric Co.; George Stevenson, American Meter Co., Inc.; W. L. Kindred, Southern Counties Gas Co.; Marion Fort, Pacific Lighting Corp.; H. S. Donovan, General Petroleum Corp.; H. A. Dresser, Fluor Corp., Ltd.; H. A. Sting, General Petroleum Corp.; M. E. Garrison, General Petroleum Corp. Front row, seated: L. R. Pickup, Southern California Gas Co.; H. W. Morgan, Reliance Regulator Co.; Guy Corfield, Southern California Gas Co.; George Tyler, secretary of the association; W. C. Dayhuff, Standard Oil Co. of California, new president.

Natural Gas News

Order Permitting Extension of Michigan Gas Lines May Be Issued This Week

SAGINAW, Mich.—An order by the Michigan Public Service Commission was expected this week to permit Consumers Power Co. to provide natural gas for 66 Michigan communities, including Flint, Owosso, Jackson, Pontiac and Kalamazoo urban areas. Hearings in Lansing developed little opposition to the plan by which Consumers hopes to culminate 4 years' work to provide natural gas in Consumers Power territory now served with manufactured gas.

Panhandle Eastern Pipe Line Co., under the plan, is to transport 70 per cent of the gas for the new market. Assurance was given Saginaw valley cities, served by natural gas for the past several years, that the plan will not interfere with valley supply at existing low rates. Actually, pipe line and Consumers officials assured the valley cities, the valley supply will be helped by importation of gas from Texas.

Meanwhile tentative settlement was announced of a dispute over alleged monopolistic control of Panhandle, the settlement being hailed as a victory for Detroit and Michigan cities. The agreement provides that Columbia Gas & Electric Corp. sell to Panhandle at cost the Michigan Gas Transmission Corp., which owns the Detroit extension of the Panhandle Eastern pipe line.

Lion Company to Build Gas Treating Unit at Magnolia

EL DORADO, Ark.—Lion Oil Refining Co. will start the construction immediately of a 15,000,000-cu. ft Girbotol plant in the Magnolia field south of this city. The process will remove hydrogen sulfide from the natural gas produced in that area and will render the treated gas suitable for use in the company's local refinery. The plant will have sufficient capacity to process gas for many other uses.

A principal benefit which the company will receive will be the replacement of the Magnolia treated gas for much of the gas now coming from the Schuler field. This, in turn, will permit a larger share of the Schuler gas to be returned for repressuring that field.

Construction is expected to be completed in August.

Refinery News

Allegany Refiners Purchases Oil Creek Refinery Equipment

BOLIVAR, N. Y.—Allegany Refiners, Inc., of Bolivar, has purchased the machinery and all processing equipment of the Oil Creek Refining Co., at Titusville, Pa., and will move it to the local plant as the first step in the expansion program authorized by stockholders last March. Frank J. McGraw, president of the Titusville firm, said the sale included practically everything but the buildings and plant site. Equipment purchased will give Allegany a complete lubricating-oil refinery and will make possible the refining of wax distillates into the finished product.

Workmen started June 16 dismantling the plant to ship it to Bolivar. They will move the wax house, a small producing still, portion of the filter house, and a complete combination unit for finishing wax distillates. Construction of a building to house the wax house and filter equipment will begin soon. In about a year the refinery will be able to run about 1,500 bbl. of crude a day. The plant has a present capacity of 1,000 bbl. Hans W. Walchli is general manager.

The Oil Creek Refining Co., which has been in operation since 1919, will eventually be dissolved, Mr. McGraw said. The plant had a capacity of 1,600 bbl.

Union Contracts for Refinery Gas From Imperial's Plant

CHATHAM, Ont.—Union Gas Co. of Canada has contracted with Imperial Oil, Ltd., for delivery of gas from the Imperial refinery at Sarnia to supplement the Union's natural-gas supply. The gas, produced in connection with refining operations, may amount to 2,000,000,000 cu. ft. annually. It has, heretofore, been used as refinery fuel, but will be replaced by fuel oil. Price of gas sold to the Union company will be based on cost of the substitute fuel to Imperial.

A new plant necessary for further processing and purifying will be erected at an approximate cost of $900,000, but owing to difficulty in procuring delivery of materials, it is expected the gas will not be available before spring of 1942.

Dominion Natural Gas Co. will construct near St. George a $300,000 plant for production of propane. The plant, with a capacity of 3,000,000 cu. ft. daily for a 12-day period, will be used to supplement the natural-gas supply, and meet peak-load demands in severe weather. The company supplies natural gas to communities from St. Thomas eastward, as well as Leamington and Kingsville. The new supply will necessitate an advance of about 5 per cent in rates.

●

Frequency of Accidents Lowered In Petroleum Industry in 1940

Reduction in the frequency of accidents in the petroleum industry in 1940 is shown by the recent report of the National Safety Council. For the 676,819,000 man-hours of exposure the frequency rate was 11.60 for 1940, a 3 per cent reduction from the previous year. The severity rate remained unchanged at 1.44. Out of 30 industries listed, petroleum ranked 14 in frequency and 21 in severity. This is a marked gain from previous years when petroleum was ranked one of the more dangerous branches of industry. On the basis of the recent report, the petroleum industry is a little above the average as far as danger of injury to the workmen is concerned.

COMPARISONS ARE OBVIOUS!

Tensile load capacities in above illustration on basis of 60,000 lbs. per sq. in. plates.

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• •

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PROGRAMS AND MEETINGS

Tax Group Will Hold Dinner Meeting on Friday

Petroleum-industry tax representatives of the Kansas-Oklahoma area, Mid-Continent Oil and Gas Association, will hold a dinner meeting at Twin Hills Golf and Country Club, Oklahoma City, Okla., Friday, June 20.

Joe D. Dunn, member of the Oklahoma Tax Commission, will discuss "Salient Features of the Recently Enacted Revisions of the Oklahoma Tax Laws." Glenn E. Brockway, employment security representative of the Social Security Board's Kansas City regional office, will speak on "Merit Rating Provisions of the Oklahoma Employment Security Act."

Neale Boyd, Anderson-Prichard Oil Corp., Oklahoma City, is taking reservations for the meeting.

Plan Varied Program for Casper A.P.I. Meeting

Rocky Mountain oil men are anticipating an interesting program when the American Petroleum Institute holds its meeting of the Rocky Mountain regional committee on drilling practice in Casper, Wyo., June 27. It is expected that more than 100 oil men from Colorado, Wyoming, and Montana will be on hand to hear the papers on the latest technical developments.

Frick Poe, Rocky Mountain division production superintendent for Ohio Oil Co., who is chairman of the program committee, has announced the following speakers and subjects:

R. S. Kail, Baker Oil Tools, Inc., Houston, Tex., "Multiple-Zone Production Packer"; C. P. Parsons, vice president, Halliburton Oil Well Cementing Co., Duncan, Okla., "Well-Bore Calipers and Oil-Well Cementing"; C. S. Meece, Rocky Mountain representative, Casper, Eastman Oil Well Survey Co., "Whipstocking and Controlled Directional Drilling"; Ray Austin, Rocky Mountain division superintendent, International Cementers, Inc., "Acidizing in Wyoming"; C. C. Beakler, Rocky Mountain division manager, and C. T. Nicholson, laboratory technician, manufacturing department of the Standard Oil Co. of Indiana, Casper, "Refining Oils of the Rocky Mountain Region"; Glen English, Rocky Mountain division manager, Hughes Tool Co., Casper, "Straight Holes and Records of Drilling," and Boyd Osborne, personnel department, Standard of Indiana, Casper, "Benefits of Safety Practice."

Technical sessions will begin at 10 o'clock Friday morning, recess at noon until 2 o'clock, and will continue to 4:30 o'clock. Mr. English, in charge of the subcommittee on entertainment, is making arrangements for a banquet and entertainment to start at 6 o'clock in the evening.

J. F. Cullen, Rocky Mountain division manager for the Stanolind Oil & Gas Co., Casper, is chairman of the Rocky Mountain A.P.I. Committee on Drilling and Production Practice, and will preside over the meeting.

A.S.T.M. to Recommend Revision In Aviation Gasoline Specifications

Refiners attending the June 23-27 meeting of the American Society for Testing Materials to be held in Chicago, at the Palmer House, will learn of proposed revisions in the aviation-gasoline specifications and will hear T. A. Boyd, chairman of the D-2 Committee on Petroleum Products and Lubricants, offer an extensive report on other phases of the committee's work. The report will contain the tentative specifications for aviation gasoline and four new methods of test for knock characteristics of aviation fuels, ignition quality of diesel fuels, carbonizable substances in paraffin wax, and aniline point of petroleum products. Following extensive studies the committee is recommending as tentative a revised test for neutralization number of petroleum products and lubricants. Two proposed methods, included as information, describe procedures for neutralization number of oxidized petroleum by electrometric titration and a rapid method which is a modification of the procedure presented as tentative. A more rapid method of test for specification number which uses methyl ethyl ketone is presented as tentative together with a revised and improved test for sulfur in petroleum oils by lamp method.

The report also includes a proposed method for potential gum in aviation gasoline which is essentially a combination of the two existing methods for gum stability and gum content with provision for correction in the case of gasolines containing tetraethyl lead. A revised diesel fuel-oil classification is included as information. Revisions in three standards are proposed and the adoption as standard of three tentative methods is recommended.

A proposed method for conversion of kinematic viscosity to Saybolt furol viscosity is published as information. Immediate revisions are presented in the tentative methods of test for gum stability of gasoline and for tetraethyl lead in gasoline.

Priorities on Metals for Refineries Discussed by Luger

SHREVEPORT, La.—Refiners in the North Louisiana-Arkansas-North Texas area heard K. E. Luger of the Carnegie-Illinois Steel Corp. tell how metals going into refinery equipment may be routed through the various government agencies to facilitate immediate construction of refinery equipment vital to our national defense. As an introduction to this subject, Mr. Luger reviewed the progress the steel industry has made in recent years whereby alloys of nickel, chromium and other metals enable the production of vessels and tubes of much greater strength and corrosion resistance than steel alone could afford.

The talk was delivered at a meeting of the technical group here June 13 of the local Western Petroleum Refiners Association. L. C. Grosjean, secretary of the division, arranged the program.

Panhandle Geologists on Field Trip

Members of the Panhandle Geological Society left Raton, N. M., Saturday morning on their annual trip through the New Mexico mountain regions studying the Pennsylvania formations. Time was also to be given to the Permian, Jurassic, Cretaceous, and Tertiary.

Prof. C. E. Needham, president and director of the New Mexico School of Mines, was in charge of the trip, assisted by Dr. M. L. Thompson, of the same school.

Ed Rumsey, Shell Oil Co., Inc., was trip chairman, assisted by Elliott Powers, Gulf Oil Corp.; Bill Hoover, Humble Oil & Refining Co.; Tom Craig, Phillips Petroleum Co., and Dave Henderson, Stanolind Oil & Gas Co.

Magnetic Storm

TUCSON, Ariz., June 16.—Moderate storm began June 12, 10 p.m., and ended June 14, 3 a.m., central standard time.

CALENDAR OF EVENTS

June

AMERICAN SOCIETY OF MECHANICAL ENGINEERS, annual meeting of Petroleum Division, Kansas City, Mo., June 16-20.

PENNSYLVANIA GRADE CRUDE OIL ASSOCIATION, annual meeting, Bradford, Pa., June 19-20.

ARKANSAS PETROLEUM INDUSTRY, Twentieth Anniversary Celebration, El Dorado, Ark., June 19-21.

KENTUCKY OIL AND GAS ASSOCIATION, midyear meeting, Lexington, Ky., June 20-21.

LITTLE INTERNATIONAL OIL SHOW, second annual exposition, Odessa, Tex., June 21-22.

AMERICAN SOCIETY FOR TESTING MATERIALS, forty-fourth annual meeting, Palmer House, Chicago, June 23-27.

September

AMERICAN CHEMICAL SOCIETY, Atlantic City, N. J., September 8-12.

NATIONAL PETROLEUM ASSOCIATION, thirty-ninth annual meeting, Hotel Traymore, Atlantic City, N. J., September 17-19.

SOCIETY OF AUTOMOTIVE ENGINEERS, national tractor meeting, Schroeder Hotel, Milwaukee, Wis., September 25-26.

NATIONAL LUBRICATING GREASE INSTITUTE, ninth annual meeting, Stevens Hotel, Chicago, September 29-30.

October

TEXAS MID-CONTINENT OIL AND GAS ASSOCIATION, twenty-second annual convention, Beaumont, Tex., October 9-11.

AMERICAN PETROLEUM INSTITUTE, twenty-second annual meeting, San Francisco, Calif., October 16-17.

AMERICAN INSTITUTE OF MINING AND METALLURGICAL ENGINEERS, Petroleum Division, Dallas, Tex., October 16-18.

INDEPENDENT PETROLEUM ASSOCIATION OF AMERICA, twelfth annual meeting, Tulsa, October 20-21-22.

AMERICAN INSTITUTE OF MINING AND METALLURGICAL ENGINEERS, Southern California Section, Los Angeles, Calif., October 30-31.

SOCIETY OF AUTOMOTIVE ENGINEERS, national aircraft production meeting, Biltmore Hotel, Los Angeles, Calif., October 30-November 1.

CALIFORNIA NATURAL GASOLINE ASSOCIATION, Los Angeles, Calif., October 31.

November

AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS, Pacific section, Los Angeles, Calif., November 6-7.

December

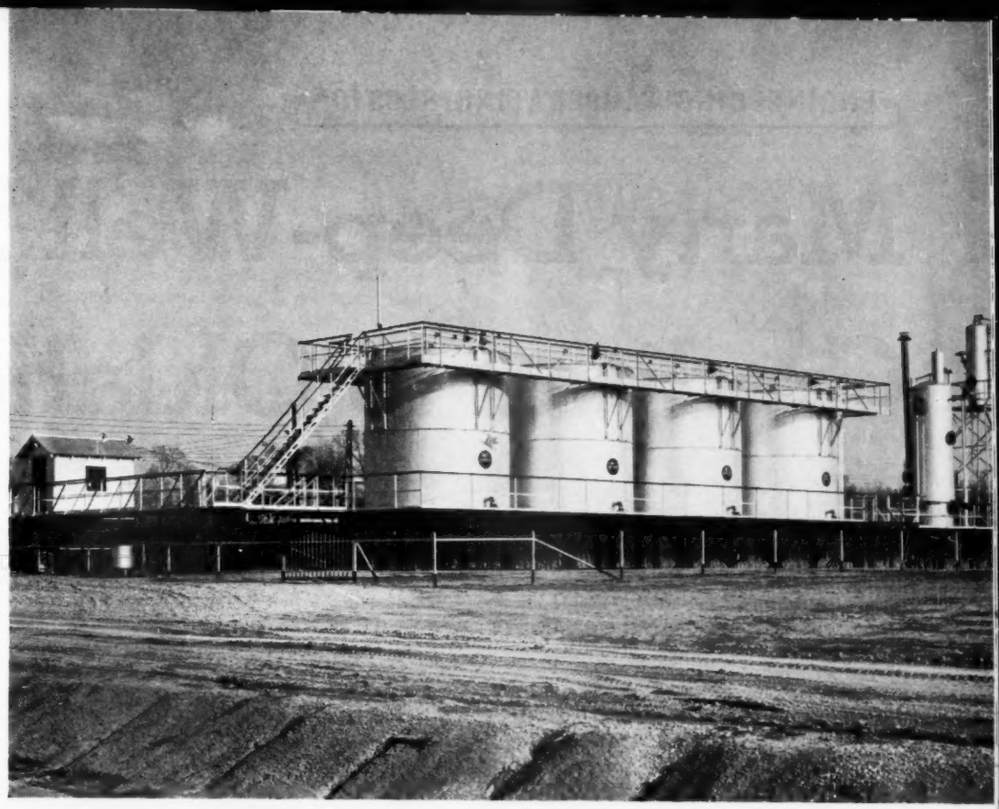
EXPOSITION OF CHEMICAL INDUSTRIES, eighth annual meeting, Grand Central Palace, New York, December 1-6.

NEW MEXICO OIL AND GAS ASSOCIATION, Artesia, N. M., December 3.

AMERICAN INSTITUTE OF ELECTRICAL ENGINEERS, Southeastern district meeting, New Orleans, La., December 3-5.

April 1942

NATIONAL PETROLEUM ASSOCIATION, thirty-ninth semiannual meeting, Cleveland, Ohio, April 16-17, 1942.



At oil fields in overflow areas near streams, pumping and lease equipment must often be placed on stilts. At this lease near Calvin, Ill., an electric generating set, tankage, separator and flow heater are all placed on supports with the various installations connected by elevated walkways. The diesel-driven generator set operates 24 hours a day on cleaned crude oil, pumping oil from nine wells to the tank battery.

ENGINEERING & OPERATION

In This Section

JUNE 19, 1941

Many Deep-Well Practices Credited to Oklahoma City

By HARRY F. SIMONS

OKLAHOMA CITY, now past its twelfth birthday, is no longer considered a deep field so far as drilling or producing goes, and yet in its heyday, its depth and the conditions encountered made it the most outstanding in the country. The procedures developed to meet the problems there have affected practices everywhere in the world as they indicated the trend necessary for successful and safe deep development. The number of firsts which can be credited to Oklahoma City are legion and only a few will be mentioned here.

Oklahoma City is far from dead at the present time, despite its age, its new lease on life being the result of the years of painstaking engineering work on the part of the regular staffs of the companies interested plus the information gained from the recent study to determine the feasibility of repressuring the pool. At the present time there are several rigs drilling new wells on the west side of the Wilcox zone in both the north and south ends of the field.

Left: New mechanical rig capable of going 7,500 ft. with 4½-in. drill pipe, drilling new Wilcox well at Oklahoma City

Right: A pair of 18 in. by 7¾-in. power-type mud pumps driven by generated electricity on an Oklahoma City test now drilling

Washing in of Wells

In the drilling and completion of all the wells in the Oklahoma City field, one of the outstanding factors was the insistance on safety for the lives and property surrounding the well. While there were some mishaps during the development of the field, they were neither numerous nor serious. In view of the pressures being handled and the fact that equipment and methods had to be developed without any guide of previous similar experience, this avoidance of mishaps was due to the determination of the companies to eliminate all hazards.

Oklahoma City was not the first place that a well was washed in with tubing, at least one previous case in Oklahoma being recorded. However, it was in Oklahoma City that the practice reached prominence and this is currently the most commonly used method of completing high-pressure wells. The method used at Oklahoma City was to core or drill the pay, run and cement the casing and drill the plug with rotary. The tubing was then run to bottom and the mud displaced with clear water until the well kicked off and started to flow. Previous to the introduction of this way of doing it, completions had been attempted with cable tools but trouble occurred with sticking.

Another method of completion was to set the pipe, drill in with heavy mud and then string up a bailing line. After running the bailer a few times, the wells would start to head and as soon as the mud was blown out into the pits, the stream would be turned into the separators.

Six years after the original development in the south part of the field, the northern section was developed and a different completion procedure was used. Bottom-hole pressure at this time was about 700 lb. Pipe was set on top of the sand, the plug drilled and mud replaced with a mixture of gas and oil; connections included a head which would permit drilling under pressure. Close check was kept on the quantity of gas and oil in the circulating system to determine the amount of oil coming from the formation as drilling progressed. This was one of the first large applications of pressure-control drilling or drilling in under pressure.

Present method is to set the pipe on top of the Wilcox sand and complete with cable tools. There is no trouble experienced with sticking tools at the present time. The bottom-hole pressure is down to around 15 lb. depending on the position of the well on the structure.

Change Casing Patterns

The casing pattern used in the field has always varied with individual companies and with the requirements of particular wells. It has followed a general trend. At the start wells ran about 300 ft. of 15½-in. surface pipe cemented to the surface, then 5,300 to 5,500 ft. of 9 or 9⅝-in. pipe cemented with 1,000 to 1,500 sacks and finally a string of 6⅝ or 7-in. pipe to 6,200 to 6,500 ft. This was later changed to 1,500 ft. of 15½-in. or 13-in. pipe with a 6,200-ft. string of 9⅝-in. pipe. These larger holes allowed a wider selection of production and pumping equipment. Another pattern was to set the 1,500 to 2,000 ft. of 9⅝-in. pipe and then a 7-in. pay string. This was in the interest of economy but it did not work out so well. The present plan is to run an 8⅝-in. pay string and use as much second-hand pipe as is possible. Use of 1,200 sacks of cement gives a fillup of approximately 1,500 ft.

Drilling Improvements

There are numerous improvements in both drilling practice and machinery which are the result of necessity developed at Oklahoma City. The present-day hoists and pumps were first demanded and first built for use in that field. These were steel jack-post rigs when first put in service but they were later unitized in the local machine shops; many of them are still in service and competing with newer models. Blocks, hooks, swivels, hoses and all items of equipment were built

in larger sizes to withstand this deep drilling.

Rigs used in the early development were all steam driven but by the time the development in the north end of the field started, the modern power-driven rig and mechanical-electric rigs were put in service. Superheater boilers were used by some contractors in the early days of this field.

Efforts to effect drill-pipe economies resulted in the efficiency of modern drill pipe. When it is considered that at one time some strings of pipe made as little as 12,000 ft. of hole before being junked, it is no wonder that the drilling contractors and oil companies were interested in the problem. It was in Oklahoma City that building up of tool joints by the welding method; welding of pipe to the tool joints, etc., first came into use.

Oklahoma City was also the first large field in which restrictions were placed on the amount of deviation of the hole permitted. At first it was placed at 10° and later at 5°. This caused a sharp revision in the weight carried on the bit and also began the stepping up of rotary-table speeds.

Mud Treatment

The first wholesale attempt to decrease the time required for drilling a well by proper mud treatment was at Oklahoma City. Contractors found by experimenting that a thin mud with other desirable qualities was sufficient for drilling most of the hole and that the rate of penetration was increased. The mud was weighted at the proper time to prevent blowouts.

The whole improvement in drilling equipment and technique is summed up in a comparison of the time and expense of drilling a well in the early days of the field and at the present time. A good average figure for a well in 1929-32 was $150,000; now the cost is around $75,000. It took 90 days to drill the early wells but the sand is picked up in 45 days at the present time.

Equipment available for the control of wells at the opening of the Oklahoma City field was entirely inadequate to the task. There previously had been very little use for such equipment. The heaviest gate valves available in the sizes needed to go on top of the casing were only 3,000-lb. pressure. Pressure was 2,600 lb. and the safety factor was uncomfortably small. Manufacturers began making the 5,000 and 6,000-lb. test valves and everyone breathed easier. In the early days it was not uncommon to see as many as six gate valves on a single well.

The change in tank batteries throughout the life of the field has been particularly interesting. Batteries on the earlier leases consisted of from 6 to 20 large tanks with 1,000 to 1,500-bbl. capacity. These gradually dwindled to only a few tanks until recently when some companies started a plan of gradually replacing the larger tanks with smaller (100 to 300-bbl.) ones which were vaporproof. This results in a substantial economy as the saving of 1° in gravity prevents a 2 per cent loss in volume and an increased price is obtained for the oil.

Flowing Wells

All of the early wells flowed on completion although generally, due to the rapid withdrawal, the flowing life was not long. Gas-oil ratios were also quite high. The present practice of running tubing in flowing wells had its inception in Oklahoma City. There was little opposition to this move as the operators realized that the tubing would be needed for artificial lifting of the oil. In most cases it was beneficial and the flowing life of the well was increased and the gas-oil ratio reduced.

In some individual cases, the tubing did little good. It must be remembered that the present-day knowledge of how to best use the bottom-hole-pressure information, the methods of obtaining it, proper depth to run the tubing, and use of packers, etc., were all lacking. Some wells flowed as long as 4 years.

From the flowing phase practically all of the wells went on gas lift. There was a large volume of oil to be handled and in addition this oil contained considerable dissolved gas and lots of sand. Had any pumping method been attempted at this point, gas locking and sand cutting would have been a serious problem. This method was not wasteful as the gas was run through gasoline plants and stripped before injection. This phase lasted 2 or 3 years with the gas being injected intermittently toward the last. Jet collars were used widely for this purpose. Before some of the wells were put on the pump they were produced with a plunger lift for about a year.

Leads in Pumping

The greatest contribution made by Oklahoma City has been in the science of pumping. If the field had not returned a profit it would have been a benefit to the petroleum industry because of the improved pumping practices developed. Practically every conceivable method for lifting oil has been tried in Oklahoma City and many pieces of equipment have been perfected there. While deeper wells have been pumped, it is the largest single application of deep pumping. Previous to its development, fields above 5,000 ft. had been the testing ground for pumping equipment. The stepping up of the depth to 6,500 ft. created so many additional problems that some believed then it would be impossible to pump the wells in Oklahoma City.

Before the gas-lift phase was at an end, attention was being paid to this problem and wells with bottom-hole pressure in excess of 300 lb. were being pumped, although with considerable difficulty. The development of the twin-crank pumping unit in place of the old standard pumping rig went a long way toward solving the problem as it permitted better balancing and the smoothing out of the cycle. This type of pumping unit is now commonly seen in all pumping fields, both shallow and deep. It is significant that even in the shallow fields, the most successful units are those with twin cranks.

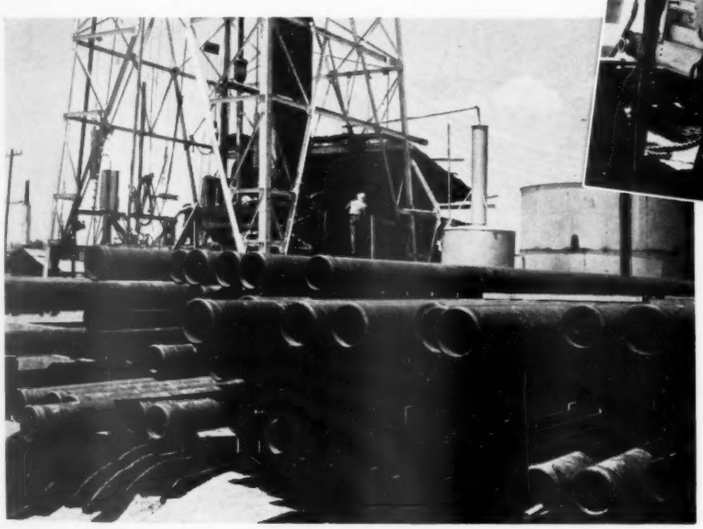
Obtaining the proper counterbalancing can only be done accurately and properly after a detailed load study of the well. Most of the companies have kept one man assigned to this work in order that he become thoroughly familiar with it and expert in it.

Beam pumping has been the most widely used in the rod type of pumps. Some pumping units were developed with a stroke as long as 11 ft. and 8-ft. strokes are quite common. In addition there were hydraulic pumping heads which had a 15-ft. stroke and gas heads which had strokes up to 12 ft. A special head was made for beam pumps which increased their stroke considerably.

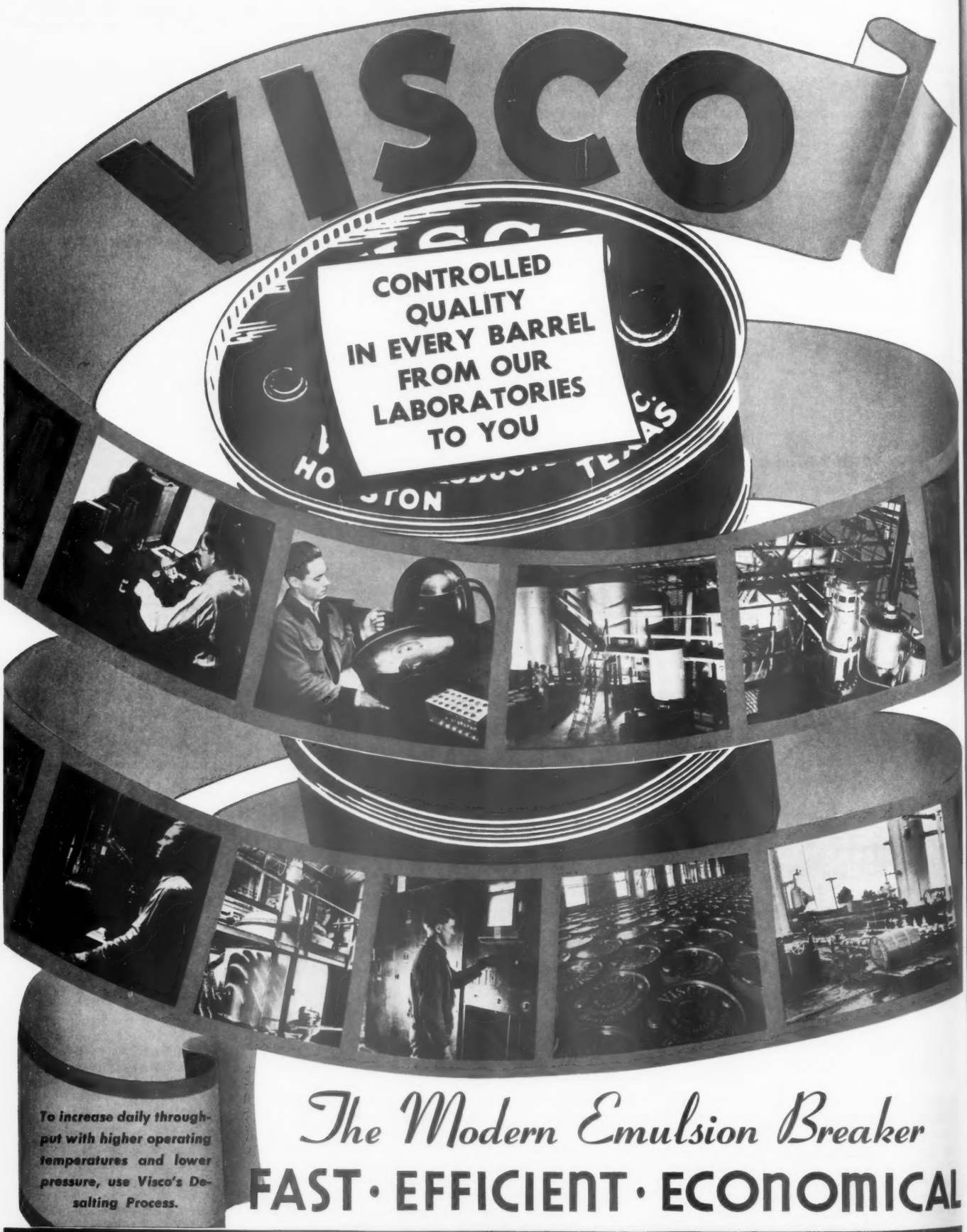
The quality of the sucker rods obtainable now are due to the research and engineering work done at Oklahoma City. Corrosion and fatigue failures were studied by the manufacturers and the producing companies and eventually the spe-

(Continued on Page 56)

Right: Cleaning out and repairing wells is an important job at Oklahoma City at the present time



Left: A string of 8⅝-in. casing ready to be run in an Oklahoma City well which is currently being drilled



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Operation of Supercharged Engines in Pipe-Line Service

By J. B. HARSHMAN
Stanolind Pipe Line Co., Tulsa

A. S. M. E.

Results of applying supercharging to diesel engines for increasing the capacity of existing installations in pipe-line service, regardless of some undesirable features, offers tremendous possibilities and its use is expected to become general throughout the industry. Some of the historical aspects of supercharging and the experiences of Stanolind Pipe Line Co. in the application of exhaust turbochargers to four-cycle air-injection engines in pipe-line service are dealt with in this article. The paper was presented at the national meeting of the Oil and Gas Power Division of the American Society of Mechanical Engineers held in Kansas City, Mo., June 11-14, 1941.

THE ambition of engineers and designers of diesel engines for many years has been to build an engine that would produce more horsepower from a given cylinder size. The limiting factor (brake mean effective pressure) could not be raised above a certain point without encountering excessive operating temperatures, resulting in inefficient operation and high maintenance costs. Since most four-cycle engines were designed against inertia forces and not combustion forces, anything which increases the engine capacity by utilizing these oversized parts is an economic accomplishment; therefore, it was only natural that consideration would be given to mechanical means of charging the cylinders with air at pressures above atmospheric.

Some of the methods used to accomplish this are as follows:

1. Mechanically driven air pumps, mounted and driven from the main shaft of the engine or driven by rocker arms from the main crosshead assembly.

2. Belt-driven blowers, either centrifugal or rotary type.

3. Mechanically driven rotary-type blowers mounted directly on the engine frame and driven from the main shaft by gearing or chain.

4. The "Wibu" system—invented by two Polish engineers, Wicenski and Bujak. This system makes use of special intake cams and a tuned intake piping system. The inventors claim from 25 to 40 per cent increase in engine horsepower.

5. "The tuned intake pipe system," which provides for an intake pipe of the proper length to produce a natural oscillation frequency to coincide with the intake valve opening. Thus a certain amount of kinetic energy is produced, giving a ramming effect of the air in the cylinder.

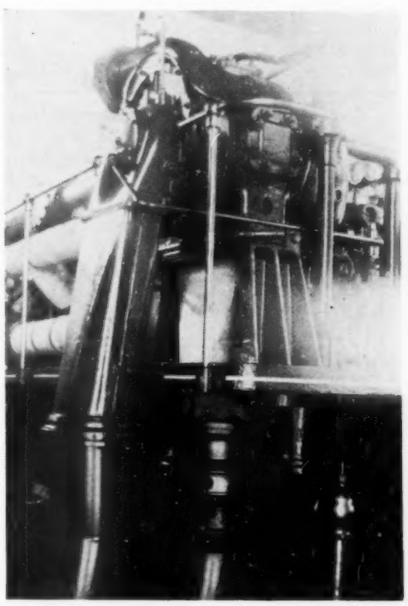
6. The exhaust turboblower.

Certain claims are made for all of the above methods. If an increased amount of air is provided, some results in the form of increased horsepower is to be expected. However, certain disadvantages were encountered with most of the methods mentioned that were undesirable either from an operating or an economic point of view.

Practically all direct-driven supercharging equipment comes in a similar category, i.e., it possesses certain undesirable characteristics, such as: (*a*) The volume of air cannot be controlled to conform with load variation. (*b*) A system of supercharging, producing only 14 to 20 per cent net increase in engine horsepower, cannot be justified economically.

The Buchi System

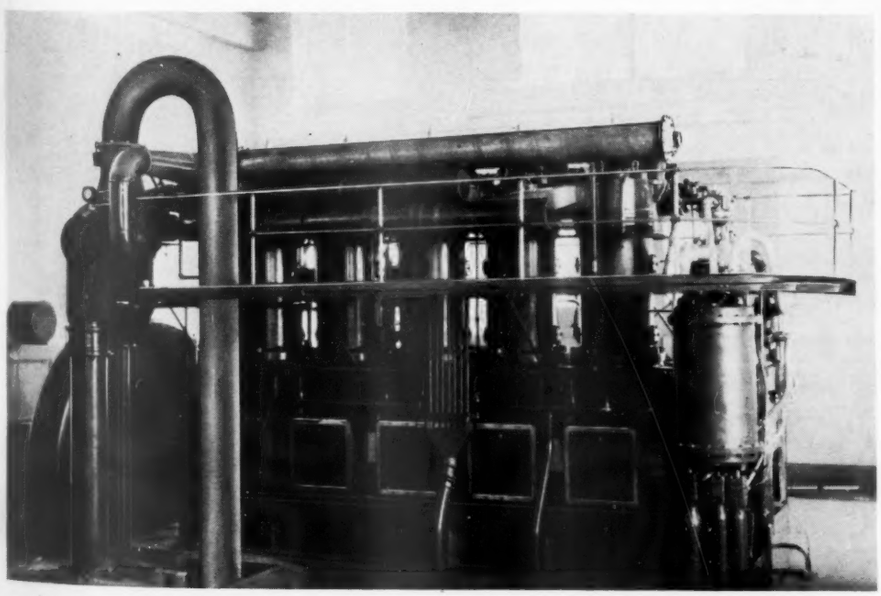
This system consists of a centrifugal air blower which is mounted on the same shaft with a single-impulse turbine driven by the exhaust gas of the engine. The turbine and blower are mounted in the same case or housing with a system of labyrinth seals to prevent leakage from one compartment to another. The mean pressure on the exhaust gases ahead of the turbine is generally from 2 to 3 lb. above atmosphere. The charging air from the blower is from 3 to 4 lb. above atmospheric pressure. Extra wide exhaust and intake cams are provided so that both exhaust and intake valves are open simultaneously, giving an overlap of 120 crank angle degrees.



European-made turbocharger installation on 500-hp. five-cylinder four-cycle pipe-line engine increasing the horsepower rating to 750

While both valves are open, the charging air passes over the top of the piston, then through the exhaust valve. Thus the cylinder is scavenged of burnt gases. The large volume of comparatively cool air in passing through cools, to some extent, the piston head, valves and upper cylinder walls, and reduces the exhaust temperature. As the piston moves from upper dead center downward on the intake stroke, the cylinder is thoroughly charged with fresh cool air at pressures exceeding atmospheric.

Engines with four cylinders and over have a system of multiple manifolding of the exhaust to permit complete scavenging of one cylinder before the exhaust valve opens on another cylinder. Thus, overlap in the exhaust manifold is avoided. At the same time, efficient fluctuations



American-made turbocharger installation on a 500-hp. five-cylinder four-cycle air-injection pipe-line engine which increases the rating to 750 hp.

or pressure waves are made use of in the exhaust manifolds to assist in scavenging the cylinders.

This division of exhaust manifolds is carried from the cylinder to inlet of the turbine. Figs. 1 and 2 show typical arrangements for manifolding four and five-cylinder engines.

Other than the division of the exhaust manifolds and the installation of larger inlet and exhaust cams, very few changes in the engine are required. The fuel system is adjusted to give a longer period of injection, the increase in the amount of fuel being proportional to the extra horsepower to be developed. The compression space must also be increased due to the higher pressure of the air at the beginning of the compression stroke.

The "Buchi" turbocharger can be set into the piping at either end of the engine at the height of the exhaust manifold, or it may be set on the floor and the piping extended from the engine to interconnect with the turbocharger.

Some of the first experiments in supercharging

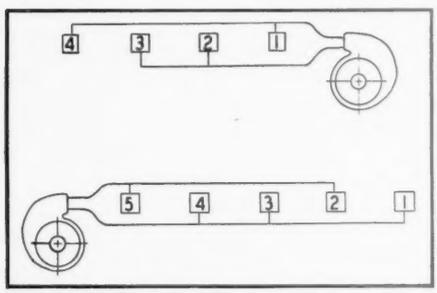


Fig. 1 (top)—Typical arrangement for manifolding a four-cylinder engine; firing order 1-2-4-3. Fig. 2 (bottom)—Arrangement for manifolding a five-cylinder engine; firing order 1-3-5-4-2

were made in Europe nearly 30 years ago; however, it was not until 1928 or 1929 that American engineers began to realize the possibilities of satisfactorily increasing horsepower by this method. The first commercial installation in the United States, of which the author has record, was made in 1928 by an American manufacturer in a western state. The elevation of the plant was 9,000 ft. above sea level and the engine was supercharged with a belt-driven rotary blower to produe its normal sea-level rating.

During the year 1930 another prominent American diesel-engine manufacturer placed in service in middle-western states, two engines making use of belt-driven rotary-type blowers for supercharging. These engines were of the four-stroke cycle, single-acting type; bore 17½ in., stroke 25 in., 225 r.p.m. Both engines were driving alternators in municipal-plant service. The horsepower increase by supercharging was approximately 15 per cent.

About 1935, American diesel-engine builders became interested in the accomplishments of certain European engine builders in the use of exhaust turbochargers. Early in 1936, several of these exhaust turbocharger units were imported to this country by engine builders for experimental purposes.

Since that time numerous installations of supercharged engines have been placed in service making use of the "Buchi" system. The greatest percentage of these are in locomotive service where maximum horsepower with minimum weight and space requirement are factors. There are, however, several stationary installations in use, two of which are in service on a major pipe line.

In the early part of 1936, Stanolind Pipe Line Co. was faced with the problem of increasing the pumping capacity at one of its trunk-line stations. The capacity desired was not sufficient to justify installation of an additional large unit; therefore,

TABLES 1 AND 2

	Table 1	Table 2
Exhaust pressure at turbine, lb./sq.in.	....	2.45
Air pressure at blower, lb./sq. in.	....	3.31
Air inlet temperature, °F.	....	50
Air discharge temperature, °F.	....	105
Supercharger speed, r.p.m.	....	15,075
Injection pressure, lb./sq. in.	1,000	1,000
Compression pressure, lb./sq. in.	500	515
Maximum pressure, lb./sq. in.:		
No. 1 cylinder	590	650
No. 2 cylinder	650	650
No. 3 cylinder	700	650
No. 4 cylinder	600	650
Exhaust temperature, °F.:		
No. 1 cylinder	690	565
No. 2 cylinder	730	560
No. 3 cylinder	640	530
No. 4 cylinder	715	560

consideration was given to the possibility of supercharging one of the existing engines in the plant and increasing the speed of the pump by installation of new gears of a lower ratio. Since the "Buchi" system seemed to have greater possibilities than other methods considered, an order was placed with the engine manufacturer for the turbine. The manufacturer also took the responsibility for doing the necessary engineering work and supplying the new cams, exhaust manifolding, etc., for the complete installation.

Experiences in Supercharging Pipe-Line Engines

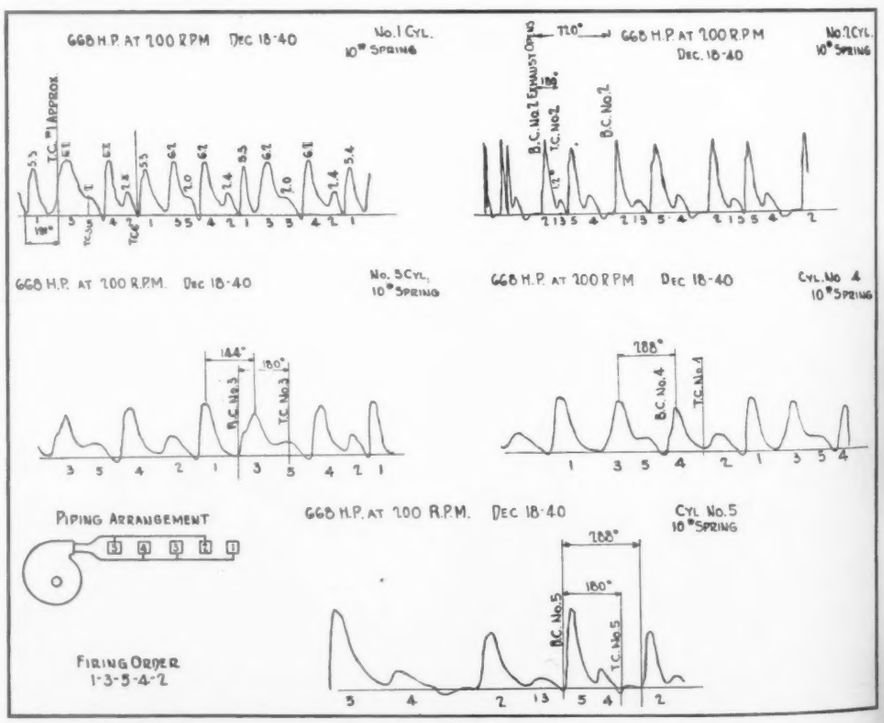
In October 1936, Stanolind Pipe Line Co. placed in service its first supercharged engine. The engine was a four-cylinder, four-cycle type 16.5-in. bore by 24-in. stroke, rated at 400 hp. at 200 r.p.m. The turbocharger was purchased for an increase of 25 per cent in engine output. The increased horsepower was accomplished without difficulty as far as engine troubles were concerned. However, trouble was experienced from the start with the ball bearings in the turbocharger. This turbocharger was built to operate at a top speed of 20,000 r.p.m. and operated at 15,000 to 16,000 r.p.m. when carrying 600 engine hp. Apparently the design of the ball bearings was inadequate for the thrust load to which they were subjected and it was found that their life varied from a few hours to a maximum of 2,000.

Table 1 represents operating conditions of this engine carrying 400 hp., unsupercharged. Table 2 represents the same engine carrying a 25 per cent overload supercharged.

After about 1½ years of operation of this unit under a serious handicap due to bearing troubles in the turbocharger, during which time the turbocharger was once returned to Switzerland for repairs, it was decided to ship the machine to an American engine builder and have the ball bearings replaced with sleeve-type bearings. During the period of tests on the supercharged pipe-line engine this engine builder had placed several supercharged diesel locomotives in service and had encountered similar trouble with the ball bearings. Sleeve-type bearings were developed for the turbocharger on the locomotive engines which had proved very successful. The ball bearings were replaced in the turbocharger owned by Stanolind with bronze sleeve-type bearings, after which the machine was again placed in service. Lubrication difficulties were then experienced with the new sleeve bearings and one bearing failed after 19 hours' operation. The bearing was replaced, the lubrication problem corrected and another test was started.

A 25 per cent increase in engine horsepower was satisfactorily obtained; however, by this time other American engine builders were becoming interested in the possibilities of supercharging and some tests had been made in which 75 and 100 per cent overload had been reached. Due to the expense involved in such an installation, it was decided that supercharging could not be economically justified for a 25 per cent increase in engine horsepower. After consulting the engine builder, a decision was made to conduct tests using the same turbocharger for a horsepower increase of 50 per cent. Certain changes were made in the nozzle rings of the turbocharger to prevent exceeding the 20,000-r.p.m. speed limit. This test was a failure due to insufficient capacity

(Continued on Page 56)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FIRING ORDER 1-3-5-4-2

Fig. 3—Weak spring indicator diagram taken on exhaust manifold of a five-cylinder engine using two manifolds, which indicates overlap of exhaust of No. 1 and No. 3 cylinders

LEFT: Two International U-2 Power Units providing low-cost, dependable pumping in the East Texas field. The U-2 develops 22 h.p. at 1,800 r.p.m. (on gasoline). Bore and stroke, 3 in. x 4 in.

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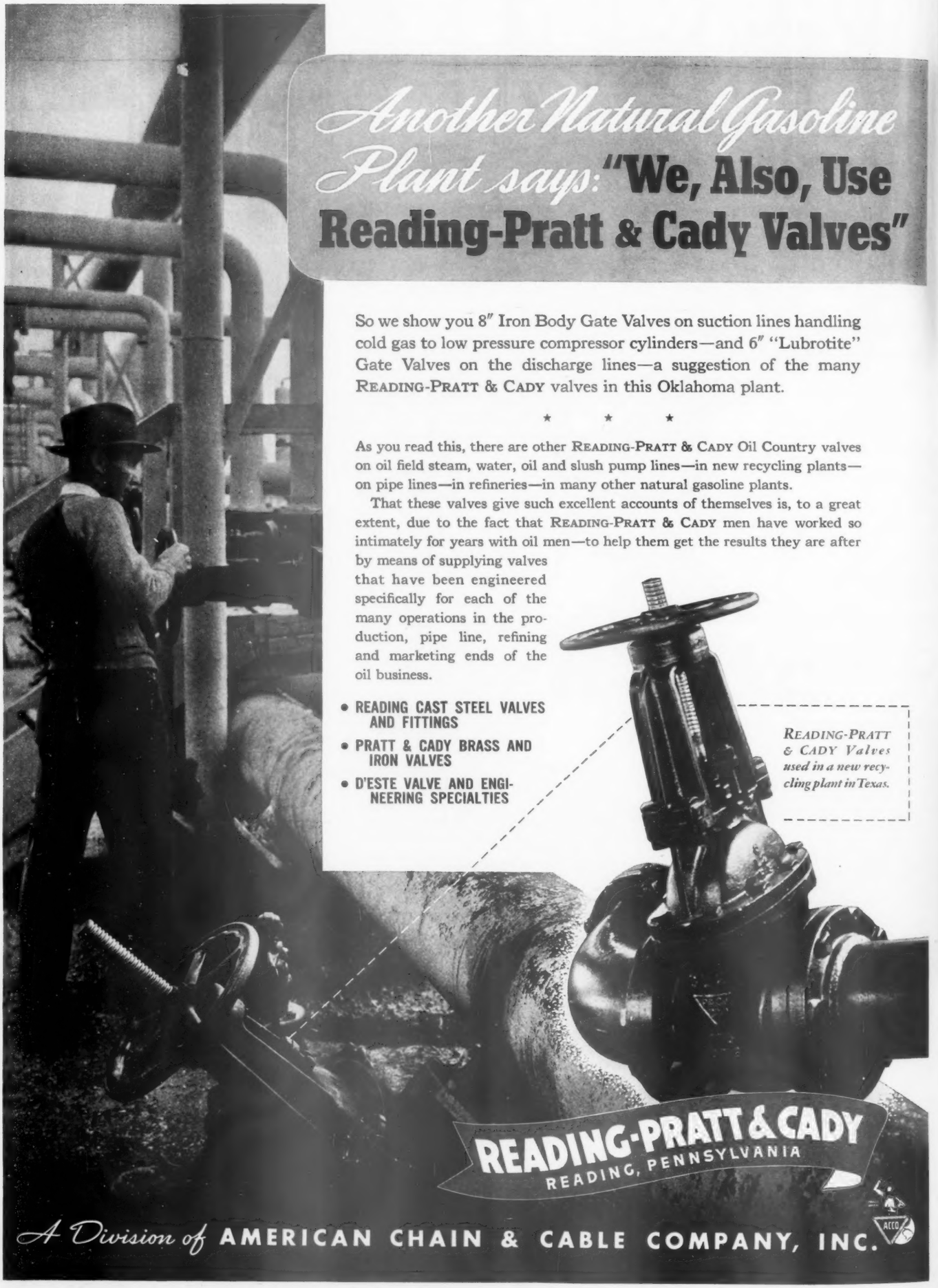

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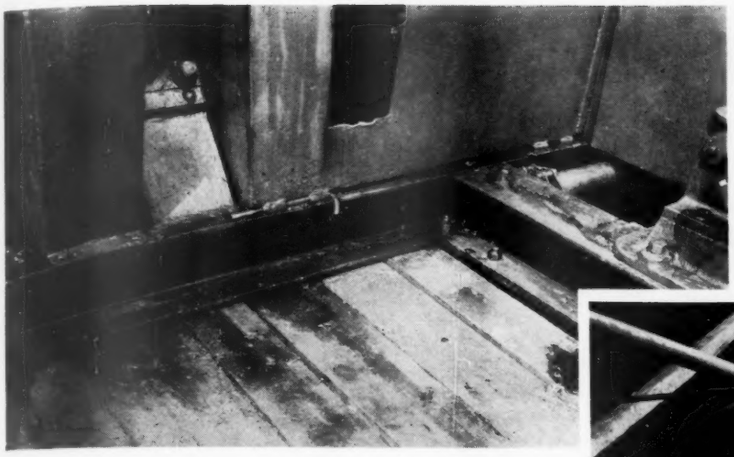
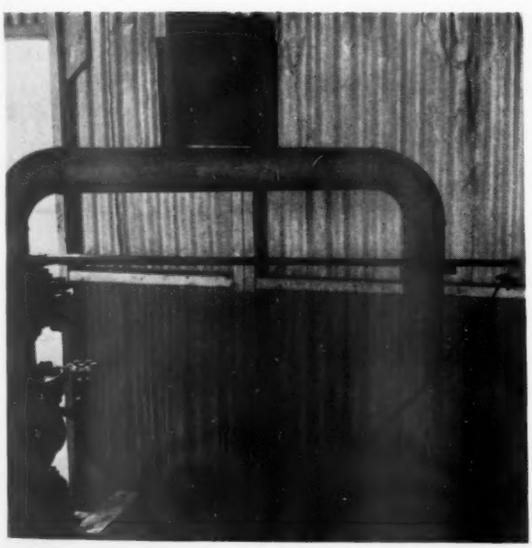
Operating Ideas



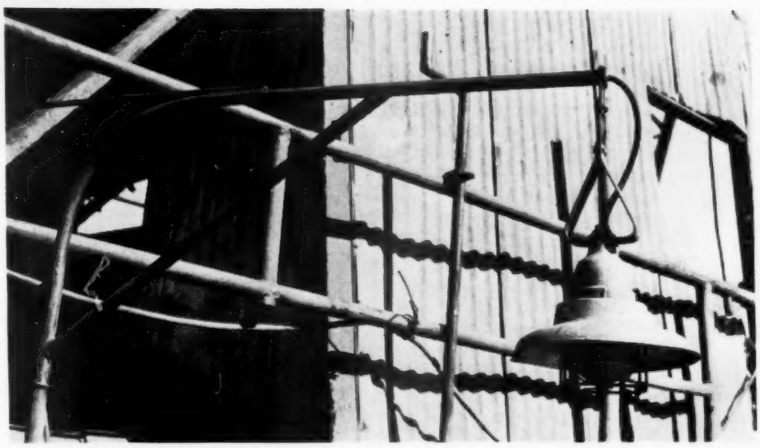
Latch Retains Draw-Works Housing

Instead of using bolts as fasteners for the guard or housing over the draw-works drive, one operator used straight bar stock of the proper diameter, one end of which is bent through 90° to form a short latch or handle. By sawing a small notch in the flange of the I-beam forming the draw-works skid at the proper point, this latch falls into the notch when the cover is secured in place, the force of gravity on the end being sufficient to retain it in the notch and prevent disengagement of the cover.



Latch for Emergency Shut-Off Valve

A short piece of flat steel, formed with a slight rise or hump near the outer end, is welded to the steam line at a level to support the outer end of the handle operating the emergency shut-off quarter-turn valve providing immediate shut down of the draw-works engine. The support, being provided with the hump behind which the lever normally rests, prevents accidental closure of the valve, or partially shutting off the steam flow. It also takes the weight of the long handle off the comparatively short support afforded by the pin around which the lever operates in moving the valve disk itself. As the sides of the hump are not squared, but made at an angle, the lever readily slides over its stop when a pull is applied on the operating cord.



Revolving Bracket for Slush-Pump Light

By mounting the light fixture for the slush pumps on a standard near the derrick, and carrying the fixture at the end of a swivelled arm provided with an extension handle reaching back to the derrick floor, one operator makes it possible to clear or replace a fixture from the floor, without the hazard of having to work from the projecting surfaces of slush-pump valve covers, cylinders, or housing. Spotting the light over the pumps is easily made automatic by inclining the socket in which the bracket is swivelled. The fixture will naturally swing around until its weight is applied at the lowest point of the slightly tilted circle in which it revolves. Protection is assured the current carrying cord by threading it inside the curved and horizontal sections of the bracket and by sealing it at point of egress with insulating compound.

Welded Gate for Well Enclosure

Welded from old sucker rod, and slung on hinges of the same material, in which the turning portion consists of ¾-in. nuts welded to the gate upright, an effective closure is provided for the well fence when the unit must be protected against grazing stock. Two nuts, welded to gate-upright bars, serve as carrier for the sliding latch, effectively held against loss by the short handle, welded in a spot preventing excessive travel in either direction. A slot, cut in the post, serves as keeper for the latch when the gate is closed. Use of a gate, instead of the more common turnstile, bars all stock, and presents a barrier difficult to be lifted free.

Use of Demulsifying Agents In Acidizing Oil Wells

By J. B. STONE and L. L. BURGE
Dowell Inc., Tulsa

Use of demulsifying agents in acidizing in most cases has proved to be so profitable that it has gained wide acceptance in areas where acidizing emulsion problems are otherwise very troublesome and expensive. The characteristics of emulsions due to acidizing are very dissimilar for different types of crudes so that each is an individual case and must be considered separately. Nearly always, suitable addition agents are available which will prevent the formation of troublesome emulsions; however, the right agent can be selected only by proper testing before an acidizing treatment begins.

ONE of the most common and yet one of the most perplexing problems encountered in acidizing is the formation of emulsions during and after treatments. Experience in the field and experiments in the laboratory have taught that the characteristics of emulsions due to acidizing are very dissimilar for different types of crude oil. Apparently the only rule which may be formulated is that the kind, the amount and the life of an acidizing emulsion cannot be predicted with any degree of certainty.

Such emulsions may be formed either with the acid or with the spent acid. In some cases only a negligible quantity may be formed, while in exceptionally bad cases as much as 500 bbl. of bad oil may be produced following an acidizing treatment. Sometimes acidizing emulsions are short-lived and break out easily, but frequently they are stable and very persistent. Consequently, the development of any method for preventing or breaking out these acidizing emulsions is complicated by the fact that each one is an individual case and must be considered separately.

Not only the type of crude, but also the production method has a pronounced effect on the formation of acidizing emulsions. Any method of producing a well which causes considerable agitation, as the returning spent acid is being produced with the oil, is almost certain to increase the amount of emulsion produced if the spent acid and oil have a tendency to emulsify.

Obviously any bad oil produced presents a problem to the operator as to its treatment or disposal. Where the well is capable of making several times its allowable, the simplest method and one often used is to run this bad oil into the pits and burn it. When recovery of the oil from the emulsion is desired, it is necessary to break the emulsion. This procedure, however, requires extra storage space for treating and adds to the expense of the treating operations as well. The usual method of breaking an emulsion is to apply heat or to add one of the numerous chemicals known as "demulsifiers" that are marketed for this purpose. Sometimes a combination of the two methods is used.

Although it is possible for spent acid-oil emulsions to be treated successfully after being produced, the best way to handle the emulsion situation is to prevent the formation of acidizing emulsions rather than break them after they have been formed. Nearly always, suitable addition agents are available which will prevent the formation of troublesome emulsions; however, the right agent can be selected only by proper testing before an acidizing treatment begins. Usually the agent is added to the acid used in treating, or to the oil used to fill the well and flush the acid from the tubing; sometimes one agent is used in the acid and another in the oil. When an agent is used in the oil, the proper amount may be mixed with all of the oil in a tank, or it may be added to the oil as it is being pumped into the well by means of a lubricator connected to the pump suction. Both gravity and piston-type lubricators have been used satisfactorily.

Acid truck and trailer approaching a well where the marshy nature of the soil required the building of a corduroy road to the well site

Many Agents Required

When the search was begun for agents to prevent bad oil following acid treatments, it was soon discovered that since the different crude oils varied widely in their emulsifying properties many agents would have to be available in order to have one suitable for each condition encountered. This variation in crudes may be emphatically illustrated by the fact that in a few instances an agent which acts as a very efficient acidizing emulsion preventer on one crude oil fails utterly on crude oil from a nearby pool. In fact, it may in rare cases even act as an emulsifying agent, causing a worse emulsion than if no agent were used. Obviously, then, some means of determining whether a demulsifying agent is needed, and if so, which one, must be available when a new crude oil is encountered. A relatively simple and speedy yet entirely satisfactory test has been evolved. The test may be made in the field by means of a specially designed portable kit.

Compact kit containing a supply of acid, spent acid, emulsion-breaking agents and testing bottles for making emulsion tests in the field

Many field experiences may be cited which illustrate the benefits derived from the proper use of demulsifying agents in acidizing. For example, a well in the Salem pool of Illinois producing from the Devonian formation was treated with 4,000 gal. of acid without the proper emul-

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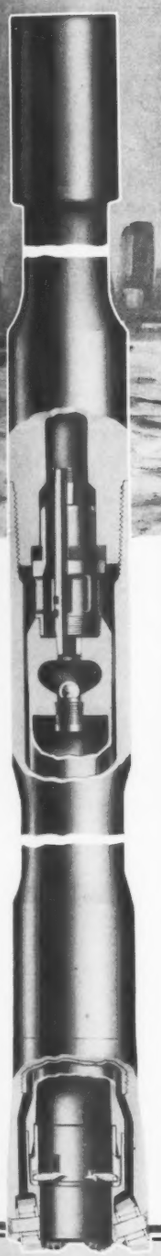

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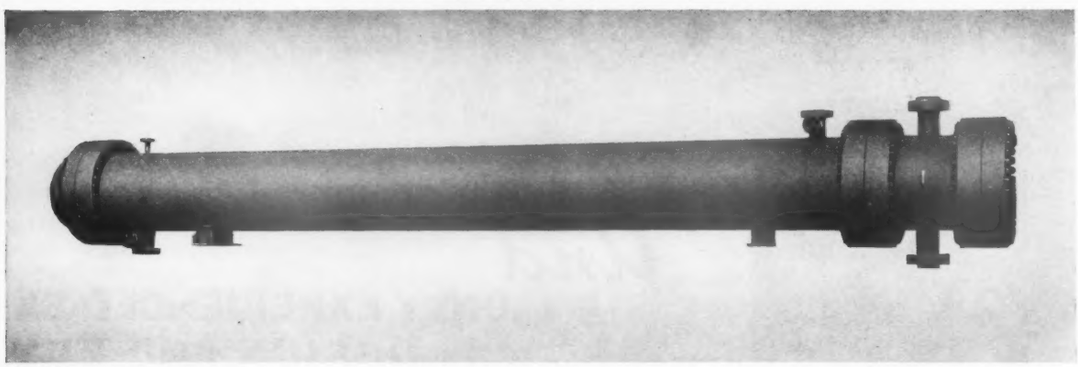

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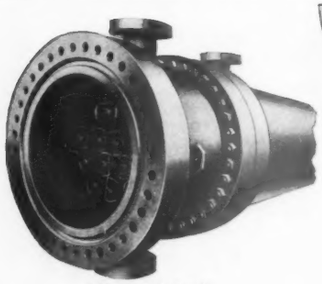

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sion preventing agents, and a tank of bad oil resulted. When other Devonian wells in the same pool were treated using the proper agents, no bad oil resulted. In these treatments the demulsifying agents were added both to the acid and to the oil used for filling the well and flushing the acid.

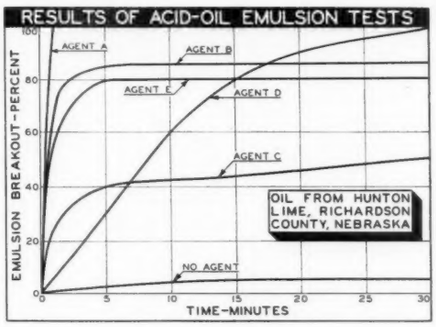
Another very convincing case that might be cited as proof of the profitable use of demulsifiers occurred in Hockley County, Texas. Offset wells were acidized by an operator using demulsifiers in the acid on one well and no demulsifiers in the acid on the other. The well which was acidized with straight acid took 3 days of open flow to clean up and make pipe-line oil. The well in which demulsifiers were added to the acid was running pipe-line oil only 17 hours after treatment.

In the Goldsmith pool of West Texas, one operator used straight acid and regularly lost about 300 bbl. of cut oil each time a well was treated. The owner of an offset lease used demulsifiers when acidizing and lost only 25 to 35 bbl. of cut oil on each well.

Emulsion-Testing Procedure

Testing procedure is quite simple and requires no unusual equipment. The proper amount of demulsifying agent is added to 20 cc. of acid in a 4-oz. prescription bottle if tests of the acid-oil emulsion are desired. If the spent acid-oil emulsion is to be tested, 50 cc. of acid with the proper amount of agent is spent against crushed limestone, preferably from the producing horizon. When reaction has ceased and the excess material has settled, 20 cc. of this spent acid are placed in a 4-oz. prescription bottle. To this acid or spent acid, 80 cc. of oil are added, and the bottle is shaken vigorously a certain number of times, usually about 15 or 20 times. The bottle is then set aside and the per cent breakout observed at regular intervals. By comparison of the rates of breakout with various agents, the proper demulsifiers for the particular crude can be readily selected.

In order that such tests may be made conveniently in the field, a special compact kit has been built. It contains a supply of acid, spent acid, emulsion-breaking agents, and bottles for making tests. Also included is an illuminating device that permits easier and more accurate observation of the breakout. Testing of oil on the spot has one special advantage in that the oil is fresh. This is very desirable, for the emulsifying characteristics of a crude oil sometimes change considerably in the time that elapses during shipment of a sample to the laboratory.



Results of laboratory tests on four different oils with several agents are shown in the tables. Agent A is an alkylated hydroxy-aromatic compound. Agent B is a mixture of crude alkyl phenolic compounds. Agent C is a mixture of alkylated aromatic sulfonates and phenol derivatives. Agent D contains amino aromatic esters. And Agent E is a mixture of sulfonated alkyl aryls and phenolic compounds.

Table 1 shows the results of laboratory tests made on a sample of crude oil from the Permian dolomite, Yoakum County, Texas. From this table it may be seen that in this instance Agent C was the most satisfactory in both acid-oil emulsions and spent acid-oil emulsions. The acid-oil emulsion was completely broken out in 15 minutes, and the spent acid-oil emulsion in only 3 minutes. Comparison with the results obtained when no agent was used makes evident the benefits of using the correct demulsifying agent. When no agent was used with the acid, the emulsion had not started to separate in 30 minutes; and with spent acid the emulsion was only 90 per cent broken at the end of 30 minutes.

Listed in Table 2 are the results of tests on oil taken from the Devonian formation in the Salem pool of Illinois. In these tests emulsion-preventing agents were used in both the acid and the oil. When the oil was tested with acid, it was found that a combination of Agents A and D in both the acid and the oil broke the emulsion most rapidly. This combination was also entirely satisfactory with spent acid, breaking the emulsion completely in 3 minutes.

Data obtained by testing oil from the Trenton lime of the Centralia pool, Illinois, are tabulated in Table 3. For this type of crude, Agent D proved most successful in both series of tests.

In the diagram are drawn several curves demonstrating rate of emulsion breakout of acid-oil emulsions when various demulsifiers were used with a sample of oil from the Hunton formation, Richardson County, Nebraska. Agent A was far superior to all others, although Agent D broke the emulsion 100 per cent in approximately 30 minutes.

Emulsions, whether as brine in oil, or acid or spent acid in oil, are formed due to the presence in practically all crude oils of stabilizing compounds which tend to hold the water droplets in suspension and prevent their coalescing. These compounds may be of a type that serves as an electrical charge nucleus for each droplet and at the same time repels other droplets so there is no chance for the droplets to coalesce; or they may be of a type that forms a protective film around each individual droplet and thus prevents coalescing. Because of the many different compounds which fall into one or the other of these two types, a wide variety of agents is necessary so that a suitable one is available for each emulsion encountered. Where emulsions are stabilized by electrically charged nuclei, this charge must be neutralized. When emulsions are stabilized by surface films, this film must be altered by the demulsifying agent so that it no longer prevents the droplets from coalescing and dropping out of the water.

The purpose of demulsifying agents, then, is to combat these stabilizing agents so that there will be less tendency for emulsions to form and so that any emulsion which is formed will be unstable and break out very rapidly. Manifestly, any emulsion formed during introduction of the acid into the well could interfere seriously with treatment results, and also aggravate the problem of treating bad oil, since such emulsions are usually of the most stable type.

Possible Emulsion Troubles

Experiments have shown that it is possible to emulsify acid merely by dropping it through a 20-ft. section of 2-in. tubing filled with oil. This indicates that there is always a possibility of forming emulsions during the introduction of the acid into the well. Such emulsions, if stable, might be forced back into the formation. In that case, since normally they are much more viscous than the acid, they might have a tendency to plug the smaller pores of the formation and serve as barriers directing the acid into the more permeable zones. Such a contingency would in all probability lead to poorer results from the acidizing treatments, as greatest benefits are usually derived from opening up the tight zones. Still another disadvantage is that the emulsified acid would not be available for reaction with the formation and consequently would be wasted. Then, there is always the possibility of plugging in low-pressure wells, if stable acid-oil emulsion is forced into the formation.

Probably most of the bad oil produced after treatment is due to agitation of the spent acid and oil in the well following treatment. The more violent the agitation, the more favorable the conditions for producing emulsions. A combination of demulsifiers and improved production methods causing less agitation of the spent acid and oil sometimes is successful in preventing any appreciable emulsion formation where demulsifiers alone or altered production methods alone are not entirely successful. Agitation could hardly be entirely eliminated, but in many cases it can be reduced sufficiently to be of great help.

The use of demulsifying agents in acidizing has proved to be so profitable in most cases that it has gained wide acceptance in most areas where acidizing emulsion problems are otherwise very troublesome and expensive. When appreciable quantities of cut oil are produced, storage facilities must be provided, and subsequent treatment of the oil is a costly and time-consuming process. Thus by preventing the formation of stable acidizing emulsions, demulsifiers are able to effect a considerable saving in the operator's production expense.

TABLE 1—RATE OF EMULSION BREAKOUT USING VARIOUS DEMULSIFYING AGENTS—PERMIAN OIL FROM YOAKUM COUNTY, TEXAS

Agent used—	Per cent of emulsion broken out after— 1 min.	3 min.	5 min.	15 min.	30 min.
Acid-Oil Emulsions					
None	0	0	0	0	0
A	0	0	0	30	80
B	0	0	0	0	0
C	90	95	98	100	..
D	0	0	10	50	80
E	90	90	95	98	100
Spent Acid-Oil Emulsions					
None	80	85	85	90	90
A	90	95	98	100	..
B	80	85	85	90	90
C	95	100	..	..	..
D	60	90	95	100	..
E	95	98	98	100	..

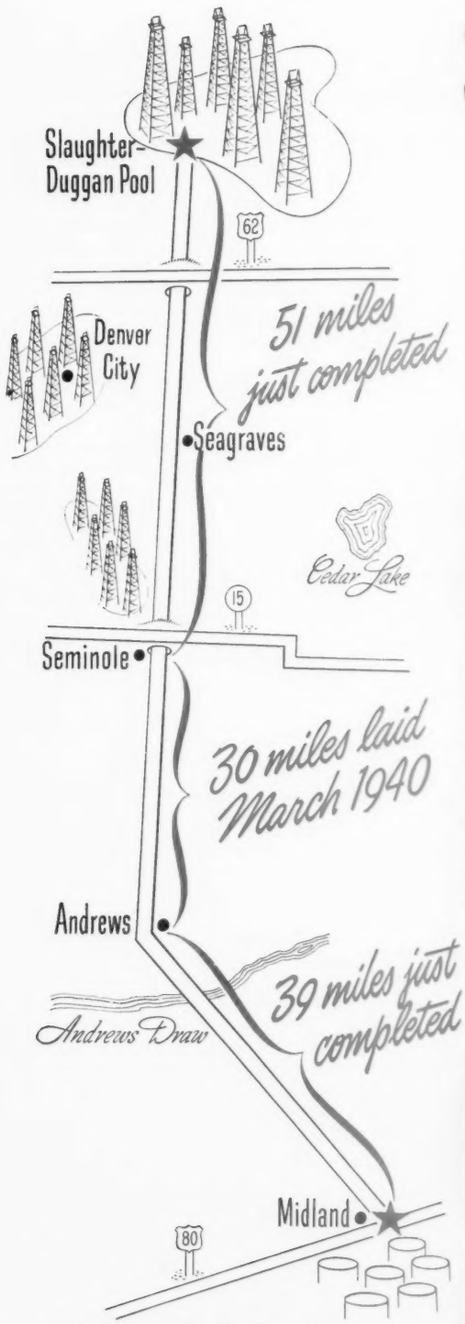
TABLE 2—RATE OF EMULSION BREAKOUT USING DEMULSIFYING AGENTS IN BOTH ACID AND OIL—DEVONIAN OIL FROM SALEM POOL, ILLINOIS

Agent in oil	Agent in acid	Per cent emulsion broken out after— 1 min.	3 min.	5 min.	15 min.	30 min.
Acid-Oil Emulsions						
None	None	0	0	0	0	0
A	C	0	5	15	40	50
A	D	0	5	15	25	50
A	E	5	15	20	40	70
A & D	A & D	40	70	100	..	..
Spent Acid-Oil Emulsions						
None	None	0	0	0	0	5
A	C	50	50	50	75	80
A	D	25	100	..	..	..
A	E	50	60	80	95	98
A & D	A & D	95	100	..	..	..

TABLE 3—RATE OF EMULSION BREAKOUT USING VARIOUS DEMULSIFYING AGENTS—TRENTON LIME OIL FROM CENTRALIA POOL, ILLINOIS

Agent used—	Per cent of emulsion broken out after— 1 min.	3 min.	5 min.	15 min.	30 min.
Acid-Oil Emulsions					
None	0	0	0	5	10
A	0	0	0	20	60
C	0	10	25	50	75
D	20	50	75	100	..
E	0	20	30	40	80
Spent Acid-Oil Emulsions					
None	0	0	5	15	25
A	60	90	99	100	..
C	95	99	100	..	..
D	98	100	..	..	..
E	50	85	99	100	..

Slaughter-Duggan crude through 120 Miles of



Route of new pipe line from Slaughter-Duggan Pool south to Seminole Pool to Andrews Junction to Midland. This line is important because Slaughter-Duggan Pool is the largest proven area in West Texas and second largest in the world.

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C

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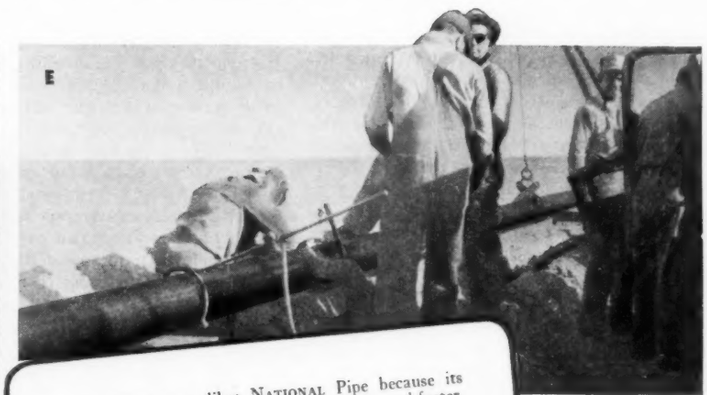


E

C. The dope gang likes NATIONAL Pipe because its smooth, clean surface makes their job easier and faster.

D. Easy bending. The ductility and uniform wall strength of NATIONAL Seamless, with freedom from longitudinal welds, assure good bending properties.

E. Faster welding because of the accurately-cut beveled ends and the clean, easy-welding steel of NATIONAL Seamless Pipe.

Calibrating Displacement Meters on Volatile-Liquid-Petroleum Fractions

By E. W. JACOBSON
Gulf Research & Development Co., Pittsburgh, Pa.

EQUIPMENT for calibration of displacement meters on volatile-liquid-petroleum fractions, such as gasoline, should be such that calibration errors, caused by evaporation of the liquid, change in temperature, and entrainment of gases, are eliminated. Meters for measuring gasoline should be calibrated on gasoline. Accurate calibration of a meter on a petroleum fraction other than gasoline does not insure that measurement on gasoline will be satisfactory; in fact, the contrary can be expected, as the viscosity of the liquid measured has a pronounced effect upon the calibration. The same meter will usually show less variation on the higher-viscosity fractions but will require alteration of adjustment to bring the average error nearer zero. If a meter is to be used on liquids of different viscosities, a separate calibration for each liquid should be made, since a single factor cannot be applied to all the liquids, to different makes of meters, or even to different meters of the same make.

The need for elimination of the errors due to evaporation of the test liquid needs little explanation. The possibility of sizable error in calibration, when evaporation is allowed to take place, is easily demonstrated by pouring gasoline from one measure to another, when a loss of at least 3 to 5 cu. in. in 5 gal. will be noted. Since 1.15 cu. in. in 5 gal. is an error of 0.1 per cent, this simple operation involves an error in measurement from evaporation alone of 0.2 to 0.4 per cent. This is a material error when considered from the standpoint of the claims for accurate measurement often made for displacement meters.

Errors introduced by volumetric change, due to change in temperature, can introduce considerable errors in calibration. The coefficient of cubical expansion for liquid hydrocarbons lies between 0.0004 for crude oils and 0.0007 for gasoline at ordinary temperatures. A change in volume of 0.1 per cent is therefore caused by 1.4° F. change in temperature of gasoline and by 2.5° F. change in crude oil.

Errors from gas entrainment in the test liquid will depend upon the conditions under which the entrainment takes place. Turbulent liquid flow in the presence of a gas will cause the liquid to absorb the gas rapidly and, after the saturation point has been reached, some gas will be entrained in the form of bubbles. If conditions of temperature and pressure change slightly, gas may be thrown out of solution to make more bubbles. The bubbles tend to rise to the surface of the test liquid when it comes to rest and in some petroleum fractions cause foaming, which retards accurate determination of the liquid level. Considerable time is necessary for all the bubbles to rise and leave the surface of the liquid.

A. S. M. E.

The author describes a prover design for use in calibrating displacement meters on volatile-liquid petroleum fractions such as gasoline which will eliminate errors caused by evaporation, change in temperature, and entrainment of gases in the test liquid. Details are also given of a simplified commercial type of prover. This type of prover has been successfully used on an extensive meter-testing program at the Gulf research laboratory as a part of the 25-year program of the A.S.M.E. fluid meters committee. The paper was presented before the Petroleum Division of the American Society of Mechanical Engineers at the semiannual meeting held in Kansas City, Mo., June 16-19, 1941.

Meter-Test Work at Gulf Laboratory

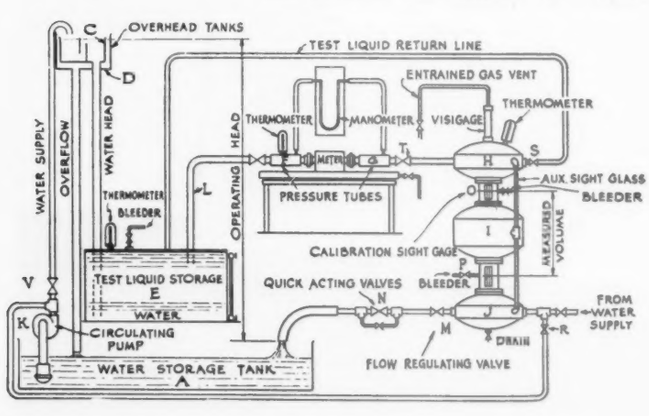
At the beginning of the meter test work at the Gulf laboratory early in 1934, a survey of the field disclosed no known method of testing meters on gasoline which would remove the errors of measurement due to evaporation of the liquid, temperature change, gas entrainment, and foaming. Therefore, it was necessary to develop an accurate meter prover which would eliminate these errors as far as possible. The basic principle used in the prover was to confine the test liquid over another liquid immiscible with the test liquid, in a gas-tight container.

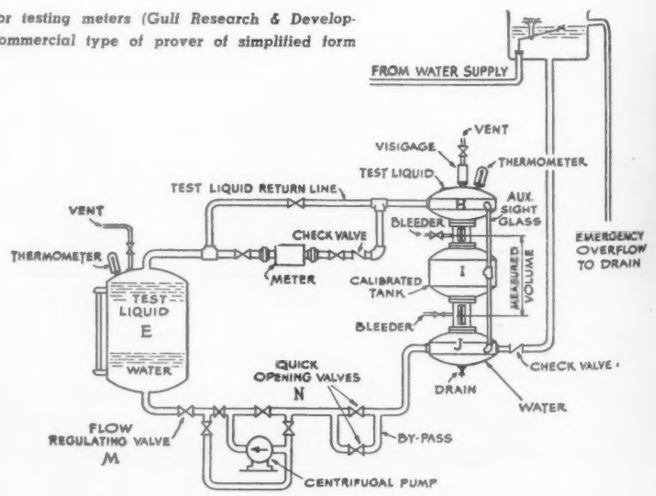
By suitable design using this principle, it was possible to maintain the test liquid out of contact with gases and thus prevent evaporation, absorption of gases by the test liquid, and foaming. A further result obtained by this method was a decided reduction in the rate of deterioration of the test liquid. Oxidation was prevented and deterioration due to mechanical agitation was found by test to be very slight.

The prover used for testing meters for error of measurement is shown in Fig. 1. Water was the immiscible liquid used to confine the gasoline and the burning oils on which the meters were tested. The prover consists essentially of a circulating pump, overhead tank, storage tank, and measuring tank with the necessary control valves and piping. The method of operation of the prover in testing a meter for error of measurment is as follows: Referring to Fig. 1, tank *A* contains a supply of water which is pumped through water-supply line to overhead tank *C*. Tank *C* discharges into tank *E* which contains test liquid in the portion above water. The head exerted by the water at a height of tank *C* forces gasoline through pipe *L*, pressure tube *F*, meter, pressure tube *G* into the upper bell *H* of the measuring tank. This test liquid displaces water in the measuring tank *I*. The displaced water passes through the bell *J*, flow-regulating valve *M*, and quick-opening valve *N*, then discharges into water-storage tank *A*.

Flow of the test liquid through the meter on test takes place only when quick-opening valve *N* is opened. Valve *N* is opened only long enough to allow a definite amount of test liquid to pass through the meter into the measuring tank. When no test liquid is being displaced, the water being pumped into overhead tank *C*, overflows tank *C* into tank *D* from which it is carried back to storage tank *A*. At the start of the test, the dividing level between water and test liquid is set at zero

Fig. 1 (left)—Schematic diagram of prover used for testing meters (Gulf Research & Development Co., U. S. Patent 2050800). Fig. 2 (right)—Commercial type of prover of simplified form





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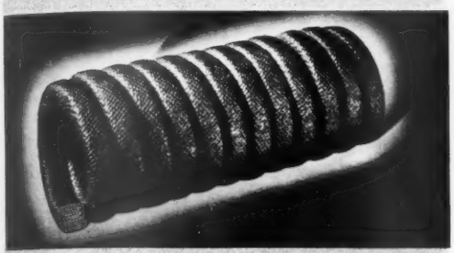

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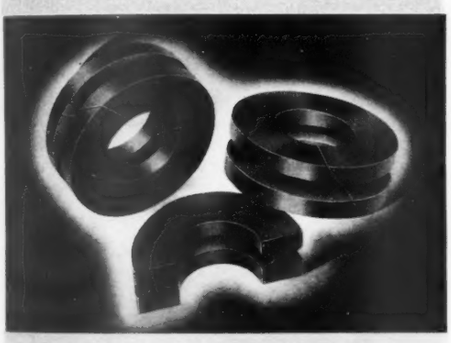

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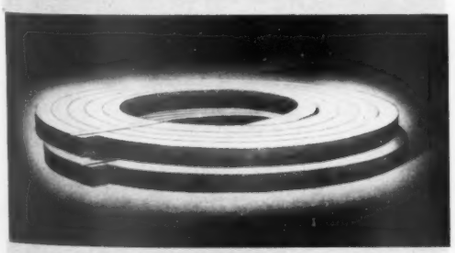

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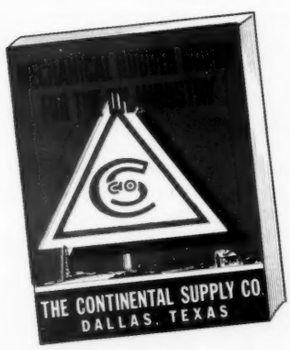

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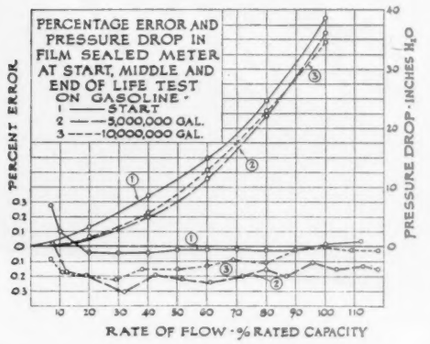
on sight gage *O*, by proper manipulation of valves *R*, *S*, and *N*. Valve *T* in the meter line is closed during this manipulation. Valve *T* is then opened after valves *R*, *S*, and *N* are closed. Valve *M* is adjusted to give the proper rate of flow and the meter-register reading is noted. The quick-opening valve *N* is opened and the water head at tank *C* forces the test liquid through the meter into the measuring tank, and the displaced water from the measuring tank discharges into storage tank *A*.

During this procedure, the dividing level in the measuring tank is lowered to some point within lower sight gage *P*. If the metered volume of the test liquid is exactly the same as the volume of the measuring tank between the zero on gage *O* and the zero on gage *P*, the dividing level will


PERCENTAGE ERROR AND PRESSURE DROP IN FILM SEALED METER AT START, MIDDLE AND END OF LIFE TEST ON GASOLINE
1 —— START
2 —— 5,000,000 GAL.
3 ---- 10,000,000 GAL.
PERCENT ERROR
PRESSURE DROP - INCHES H2O
RATE OF FLOW - % RATED CAPACITY

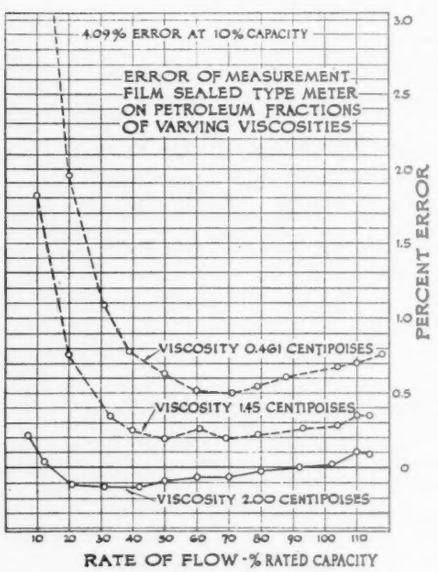

4.09% ERROR AT 10% CAPACITY
ERROR OF MEASUREMENT FILM SEALED TYPE METER ON PETROLEUM FRACTIONS OF VARYING VISCOSITIES
VISCOSITY 0.461 CENTIPOISES
VISCOSITY 1.45 CENTIPOISES
VISCOSITY 2.00 CENTIPOISES
PERCENT ERROR
RATE OF FLOW - % RATED CAPACITY

Fig. 3 (top)—Percentage error and pressure drop in film-sealed meter at start, middle and end of life test on gasoline. Fig. 4 (bottom)—Error of measurement, film-sealed-type meter, on petroleum fractions of varying viscosities

be at zero on gage *P*. If the two volumes are not the same, the reading on gage *P* at the dividing level will be the error of measurement of the meter. After a test run, the test liquid which has been passed through the measuring tank during the run is returned to the storage tank through the test-liquid return line by closing valve *T* and pump throttle valve *V*, and opening valves *R* and *S*. This forces the test liquid by means of water under pressure from pump *K*, into tank *E*, which in turn displaces water up through tank *C* into tank *D* and back into storage tank *A*.

Air entrainment is prevented by inserting the end of pipe *L* into tank *E* so that any air which may get into tank *E* will collect in the top of the tank where it can be removed through the vent pipe. The curved heads of the measuring-tank bells carry any entrained air up through the liquid in the tank into the visigage on top where it is readily observable to the operator. Some air will be present in the visigage during the first runs after the insertion of a meter for test, until the meter has been worked free of air. This action ordinarily takes two or three test runs, after which, succeeding runs will show the system to be free of air. Air in the visigage is bled off through the vent line. Pressure drop through the meter is determined by the use of manometers connected across standard pressure tubes *F* and *G*, which contain piezometer rings and pitot tubes.

A constant operating head on the system is maintained by the overhead spill tank *C*. The total available head for operating the system is determined by the height of the upper edge of tank *C* above the level in storage tank *A*. The bleeders on the sides of sight gages *P* and *O* are for the purpose of removing any bubbles, dirt, or contamination which may collect in the dividing level between the water and the test liquid in the measuring tank, which may cause difficulty in gaging the level. The auxiliary sight gage shown on one side of the measuring tank aids in determining location of the measuring dividing level.

Commercial-Type Prover of Simplified Design

The apparatus just described is of the type to be used in an extensive meter-test program, such as carried on at the Gulf laboratory, wherein not only the accuracy of measurement under test was desired, but also the variation in accuracy and pressure drop throughout a life test. For a commercial application of this type of prover, a simplified setup, such as shown in Fig. 2, is sufficient, when only the measuring characteristics of the meter are required, as in routine pipe-line measurement or distributing-truck service.

The essential elements for a commercial prover would require only two tanks, one the test-liquid storage tank and the second a measuring tank, such as combined tanks *H*, *I*, and *J*, Fig. 2. The discharge from tank *J* would then be piped through the regulating valves and circulating pump directly into the water side of tank *E*. Any desired pressure could be maintained on the entire system by connecting an outside high-pressure water supply into tank *J* through a reducing valve or overhead float tank as shown.

The measuring compartment of a good prover should have a capacity at least equal to the volume corresponding to the full flow of the meter in 1 minute; for instance, a prover for testing meters with maximum flow rate of 300 g.p.m. should have a measuring-compartment capacity of at least 300 gal. Careful calibration of the compartment is of utmost importance. . . .

Several trial fillings of the prover measuring tank, using accurately calibrated measuring cans, should be made to give an average reading for the correct setting. Besides the error in the measuring cans, additonal error may be involved in such checking operations by failure to observe due care in maintaining wetted surfaces in the 5 gal. measures and prover. There will be some slight further variation due to the different wetting qualities of the test liquid and the liquid to be used in the prover. Even with the utmost care in calibration of a prover measuring tank, differences between provers of at least 0.1 per cent may be expected.

The type of prover described has been used with good success on burning oils as well as gasoline. It should be satisfactory for use in calibrating meters on propane and butane where the test liquid must be maintained under pressure. The curves, in Figs. 3 and 4, are representative of the data obtained on the Gulf laboratory prover. Repeat tests with this prover at a particular rate of flow gave good repetition of data, demonstrating the suitability of the prover for the service. . . .

Meter Performance

The most important characteristic of meter performance is the effect of viscosity on the shape and position of the proof line. As pointed out in a previous paper* by the author, film-sealed-

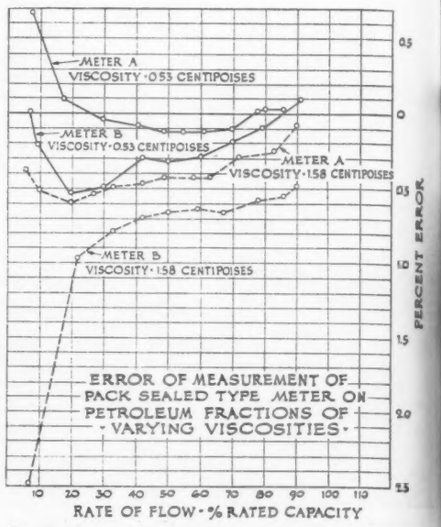

METER A VISCOSITY - 0.53 CENTIPOISES
METER B VISCOSITY - 0.53 CENTIPOISES
METER A VISCOSITY - 1.58 CENTIPOISES
METER B VISCOSITY - 1.58 CENTIPOISES
ERROR OF MEASUREMENT OF PACK SEALED TYPE METER ON PETROLEUM FRACTIONS OF VARYING VISCOSITIES
PERCENT ERROR
RATE OF FLOW - % RATED CAPACITY

Fig. 5—Error of measurement, pack-sealed-type meter, on petroleum fractions of varying viscosities

type meters are in general affected much more by change in viscosity than pack-sealed-type meters. Fig. 4 shows error data for a film-sealed-type meter which was greatly affected by viscosity of the liquid. This meter gave satisfactory measurement as calibrated on a burning oil of 2 centipoises viscosity. However, its calibration on lighter petroleum fractions showed very unsatisfactory measuring characteristics.

Fig. 5 shows data for two-pack-sealed meters of identical size and construction. Meter *A* showed wide variation between burning oil (1.58 centipoises) and gasoline (0.53 centipoises). Meter *B* shows the same difference, except that it had large error in deficiency at flow rates below 20 per cent of rated capacity. This difference at the low rate of flow was likely chargeable to faulty valve setting. These data show extreme cases of faulty measurement and are not to be construed as being representative, however, they do illustrate some of the reasons for failure of meters to check one another. Proper testing of each meter would disclose unsatisfactory characteristics and would permit their correction.

In conclusion, a prover design, such as described in this paper, is available for use in calibrating displacement meters on volatile, low-viscosity petroleum fractions which will eliminate calibration errors caused by evaporation of the liquid, change in temperature, and entrainment of gases in the test liquid. This type prover has been successfully used on an extensive meter-testing program and has demonstrated the need for testing each meter on the liquid on which it is to be operated.

Acknowledgment

The writer is indebted to R. J. S. Pigott, chairman of the fluid meters committee, for suggesting the material for this paper. The apparatus described was used in the fluid-meter tests made at the Gulf research laboratory, Pittsburgh, Pa., as a part of the 25-year program of the A.S.M.E. fluid meters committee.

* "Some Fundamental Considerations in the Design and Application of Displacement Meters," by E. W. Jacobson, A.S.M.E. Petroleum Fluid Metering Conference, Norman, Okla., Apr. 11-12, 1940.

Left: Bolting up Dresser Coupling on United Gas Pipe Line Company's 18-mile, 20" OD line from Koran to Minden, La. The main, 124-mile section of 18" OD line from Sterlington, La., to Jackson, Miss., was also Dresser-coupled, as were six miles of 16" tie-in line in the Monroe field. Completed: December, 1939.

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Use of Natural Gas In Oil Refineries

By FRANK S. KELLY, JR.
Arkansas Louisiana Gas Co., Shreveport, La.

THE use of natural gas in refinery operations has been a factor in the industrial sales of integrated natural-gas companies in the Mid-Continent, Gulf Coast, and California areas since the beginning of our industry. The increased utilization of natural gas in refinery operations, where natural gas was available, has kept pace with the increase in efficiencies and improvements in the technique of producing higher octane gasolines, better naphthas, kerosene, lube oils, fuel oils, and other refined products.

The latest figures available regarding the use of natural gas in refineries are from the annual report of the Bureau of Mines for 1939, entitled "Survey of Fuel Consumption at Refineries," which report indicates the trend in the use of natural gas. During the year 1939 on crude runs of 1,250,000,000 bbl. in the United States, the average heat required per barrel of throughput was 557,000 B.t.u. Natural gas used during this period amounted to 97.6 billion cubic feet, of which 87.7 billion cubic feet, or 90 per cent, was used by refineries in the Mid-Continent, Gulf Coast, and California areas.

A.G.A.—Paper presented before the industrial and commercial session of the American Gas Association at its annual meeting held in May 1941 at Dallas, Tex.

Our company, which operates an integrated gas pipe-line system in East Texas, North Louisiana, and Arkansas, serves 12 refineries with a daily throughput capacity of 95,000 bbl. These refineries make up a substantial part of the industrial load of our system; and during 1940 consumed in excess of 9 billion cubic feet of gas. They consist of all types and sizes of plants, varying from 200-bbl.-per-day lube-oil plants to 23,000-bbl.-per-day refineries.

During the past several years, as a result of improvements in the art of refining crude oil, the heat requirements of all refineries have tended to increase steadily in the face of constantly decreased heat requirements per barrel of throughput. In other words, if new equipment is installed, such as is necessary for polymerization, the heat units per barrel of throughput tend to decrease; but due to the fact that larger quantities of still gases are utilized to make higher-octane gasolines and other products, it is necessary in most cases for the refineries to increase their heat requirements. This means that in the natural-gas areas increased quantities of natural gas are used each year for this purpose. In the case of one refinery in this territory, as a result of the installation of polymerization equipment, the still gas available to the refinery decreased by 30 per cent, and a majority of this deficiency was made up with natural gas.

The tendency in this section has been for the smaller refiners to manufacture a wider and more specialized type of product, which has resulted in less still gas and fuel oil being available for use in the boilers and stills of the refineries. Several refiners have redesigned and specialized their manufacturing equipment to where they have very little fuel oil for which to find a market. In these cases natural gas, or natural gas and fuel oil, or still gas are used to generate all the heat required in the refining process.

Effect of New Processes

The new refining processes have resulted in the increased use of electric motors for numerous automatic pumping operations. These motors have caused a substantial increase in the electric power required per barrel of refining capacity. This has resulted in the refiners installing more and more gas-engine generating equipment. One relatively large refinery in this territory has a complete gas engine-electric plant and generates all its power requirements without any standby facilities. It is interesting to note that in 1939 the refineries in the Mid-Continent, Gulf Coast, and California areas used a total of approximately 900 million kilowatt hours, which if produced by the refineries in gas engines or turbine generators would have created a market for over 14 billion cubic feet of natural gas. Of course, we realize that part of this electricity probably was generated by natural gas in a central power plant.

As a result of the increased efficiency of refining processes, it has been necessary for all gas companies to increase constantly the service and facilities available for refinery operations. In several instances our company, as an accommodation to the refineries, has made gas available at pressures up to 100 lb., in order that certain automatic equipment may be operated more satisfactorily. The availability of relatively high-pressure gas also has resulted in its energy being used for numerous incidental purposes, such as flowing water wells, operating gasoline loading lines, etc., with the low-pressure gas being utilized finally under boilers or stills. All refiners prefer natural gas to any other fuel where it is available and reasonably priced, due to its constant pressure, uniform quality, ease of handling, and automatic control features. Numerous refiners have so redesigned their plants that no fuel other than natural gas is used in their entire operations.

Some refiners report that with gas at 10 cents per 1,000 cu. ft., the fuel cost per barrel of throughput on a 100 per cent natural-gas fuel operation will be approximately 5 cents per barrel, with natural gas accounting for approximately one-third of the out-of-pocket cost per barrel of the refining operation.

All of us are familiar with the problems fac-

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The Globe Steel Tubes Co., specializing in the manufacture of Seamless Steel Tubes, now has one of the largest and most well equipped chemical and physical laboratories of its kind, concentrating on tubing problems.

This laboratory is maintained for the convenience of our customers and to enable us to exercise exact laboratory control over all production for consistently uniform quality. It is under the supervision of graduate metallurgists and chemists who are prepared to make chemical, physical and microscopic examinations of steel which present day requirements demand.

In addition to the most advanced machinery and methods in the mill, under the control of a large staff of experienced engineers and technicians, the Globe Steel Tubes Co. laboratory is another important factor which contributes substantially to the inherent quality of Globe "Seamless for Safety" Tubes.

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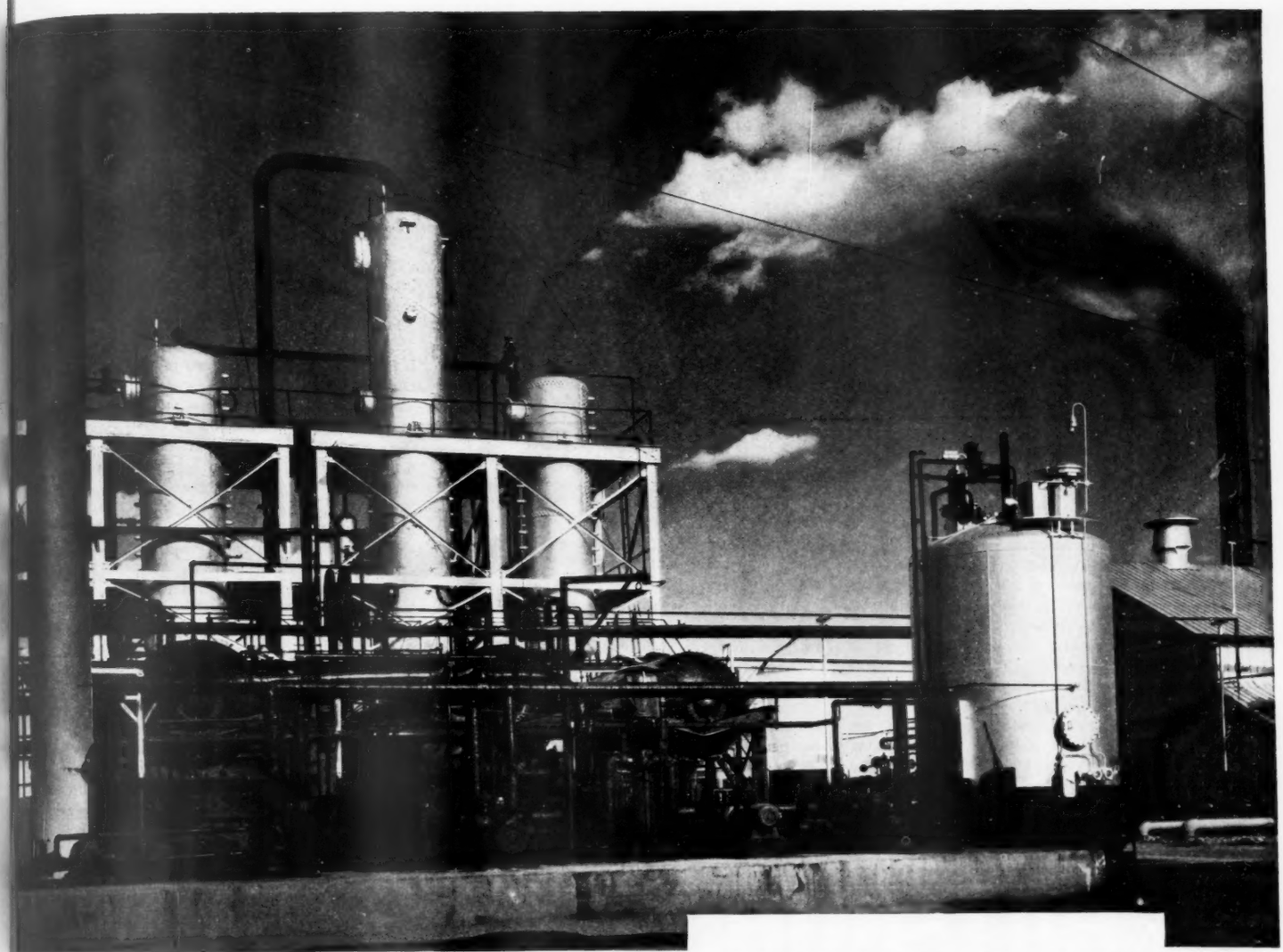
GLOBE Seamless TUBES



PETRECO PREVENTS PLUGGING

Plugging of modern refinery equipment is almost universally attributed to salts in crude charging stocks. It is also evident that plugging is only one of the evils due to salt. Frequent shutdowns due to tube failures, corrosion repairs, costly ammonia treatments, and low quality products, all are refinery curses which may be traced to the salts present in charging crudes.

The Petreco Desalting Process provides the petroleum industry with positive relief from salt troubles. In every case where Petreco units have been installed, *on stream time has been increased anywhere from 50% to 1000%*. In every instance plugging has been eliminated, corrosion has been reduced, and the use of ammonia has decreased.

Savings thus effected are not theoretical. They have been, and are, being measured in dollars. The Petreco Desalting Process is proving itself in daily commercial operation—such proof should be most convincing to practical refinery men. Why not call the Petreco organization now? There is no charge for preliminary case studies or surveys.

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Gulf Coast Division: Houston, Texas *Eastern Division:* Toledo, Ohio

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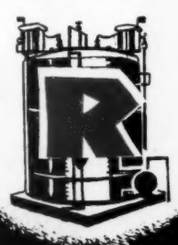

PETRECO

DE-SALTING DEHYDRATING

ing the average refiner who is endeavoring to operate an independent refinery at a profit. It is logical to assume that research and increased knowledge of refining operations will result ultimately in radically new refining equipment and the discovery of valuable new refined products. In this connection the value of the byproducts available in still gases offer one of numerous possibilities for increasing the net earnings of a refining company. Refinery still gases in 1939 accounted for 51 per cent of the total heat units used in all United States refineries and amounted to 246 billion cubic feet. As a hypothetical illustration, there is outlined below the analysis of a typical refinery still gas:

Hydrocarbon—	Percentage
Methane	30
Ethane	22
Propane	15
Propylene	13
Butane	10
Butylene	10
Total	100

This typical still gas has a heating value of 1,878 B.t.u. per cu. ft.; and if used as refinery fuel at 10 cents per 1,000,000 B.t.u. it is worth 18.8 cents per 1,000 cu. ft. If this still gas were used in a thermal polymerization plant the byproducts per 1,000 cu. ft. of still gas would be 6.6 gal. of polymer gasoline and 898 cu. ft. of 1,188 B.t.u. fuel gas. The value of the 6.6 gal. of polymer gasoline at the present market price of 5¼ cents per gallon would be 34.6 cents, and the value of the 898 cu. ft. of fuel gas at 10 cents per 1,000,000 B.t.u. would be 10.7 cents per 1,000 cu. ft., or a total value for both products of 45.3 cents. This compares with the 18.8 cents per 1,000 cu. ft. fuel value of the original still gas, or a net difference of 26.5 cents per 1,000 cu. ft. In other words, for every 1,000 cu. ft. of still gas burned as fuel, without processing through a poly plant, the refinery lost 26.5 cents of potential gross revenue.

Value of Still Gases

To illustrate further this hypothetical case, the Bureau of Mines report for 1939, previously mentioned, indicates that the refineries in the Mid-Continent, Gulf Coast, and California areas consumed during 1939 a total of approximately 158 billion cubic feet of refinery still gases and that the total consumption by all refineries in the United States of still gas was 246 billion cubic feet. This 158 billion cubic feet of still gases, with due allowance for gases already processed through a poly plant, represents potential charging stock for a poly plant, of 119 billion cubic feet. This 119 billion cubic feet of still gases, assuming it had the same analysis as the typical refinery gas outlined above, would produce potential gross revenues of $31,500,000, which is the difference between the value of the still gas as charging stock for a poly plant versus its value as a fuel gas.

The processing of this 119 billion cubic feet of still gas would create a market for makeup natural gas in these refineries of 96 billion cubic feet, which valued at 10 cents per 1,000 cu. ft. would be worth $9,600,000 per year to the gas industry. Combining this potential market with the potential 14-billion-cubic-foot electric generating load makes a total of 110 billion cubic feet of possible new markets. This is 125 per cent of the total natural-gas market of the Mid-Continent, Gulf Coast, and California refiners in 1939.

In addition to the earnings to be derived through polymerization of still gases, there are available or in the process of development, many methods for obtaining from the unsaturated hydrocarbons present in still gases, but not present in natural gas, organic chemicals whose value is many times greater than the present value of the still gases. Among these materials are the solvents, isopropyl and butyl alcohol, propylene chloride and propylene chlorohydrin; the antiknock compound isopropyl ether; the sulfur dioxide resins used in molded plastics; the explosive base glycerol and the rubber base butadiene, both so important to the defense program. The economics involved in the manufacture of these materials, while it is unknown to the speaker, must be attractive, as evidenced by the fact that a number of them are now being produced by several refineries in the Mid-Continent area. Any further utilization of these refinery gases will open additional markets for natural gas.

I would recommend for those interested in a further study of the byproducts obtainable from refinery gases and natural gases that they obtain a copy of the paper delivered by F. H. Dotterweich, associate professor of natural-gas engineering at Texas College of Arts & Industries, Kingsville, Tex., before the twentieth annual convention of the Natural Gasoline Association of America at Dallas, Tex. This paper covers in a complete and comprehensive way the present and potential products which may be obtained from the saturated and unsaturated hydrocarbon gases.

Present trends and future possible developments indicate that the natural-gas companies should continue to obtain increasing quantities of the refinery load, assuming their rates and service are competitive with refinery residue products.

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The HILL-HUBBELL "factory process" gives you more for your money because it applies Coating-and-Wrapping more efficiently: your STEEL PIPE is REALLY PROTECTED. With our "factory process" using automatically controlled, heavy, stationary equipment that is PERMANENTLY installed in the Mills we *should* do a better job. A HILL-HUBBELL "factory process" job not only costs no more but also gives BETTER Pipe Protection.

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The hot, West Texas, wind-swept plains will soon prove the worth of men and machines. For years Allis-Chalmers Well Servicing Equipment has year-in and year-out serviced a greater number of wells at a consistently low cost. It never gets too hot for Allis-Chalmers Equipment to function properly.

ALLIS-CHALMERS MODEL E SKID WINCH

Allis-Chalmers Pulling Units are built for year 'round service in the oil fields. *Engines are properly cooled and lubricated* . . . you can't drive them too hard! The engine blocks have much larger water capacity than do automotive type engines. This **extra** water capacity is in the cylinder head, around the valves and combustion chamber. The high velocity impeller type water pump circulates this **large volume of water at one gallon per minute, at 1 ft. head, per h.p. developed.** Entire cylinder walls from top to bottom are continuously covered by a **thick sheet** of water. Larger capacity copper tube radiators and large high speed fan insure rapid heat dissipation.

The Allis-Chalmers Model E Well Servicing Unit is available in WINCH TRACTOR or SKID WINCH types. Maximum line pull 54,700 pounds. Eight line speeds from 51' to 1,074' p.m. Both types are available with double drums, telescoping mast, and spudding equipment.

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Many Deep-Well Practices Credited to Oklahoma City

(Continued from Page 35)

cially heat-treated, nickel-steel rod was developed. This type of rod is resistant to corrosion and has great strength and toughness. The success of this work is shown by the fact that 6 years ago the life of a rod string was only 4 years (completely replaced in that time) and at the present time it is 6 years. Not only is there a 33 per cent saving but the cost of servicing the wells is reduced.

In addition to the rod pumps, two other methods were brought into prominence by the Oklahoma City field. These were the electrically driven centrifugal pump and the hydraulic pump. Both of these will handle much more fluid than the rod pump.

A net result of all the pumping work done at Oklahoma City can be seen at the wells producing from the shallower horizons there. Size of the pumping units is scaled down to a point not imagined 10 years ago. The same could be done successfully with the units for the deep wells.

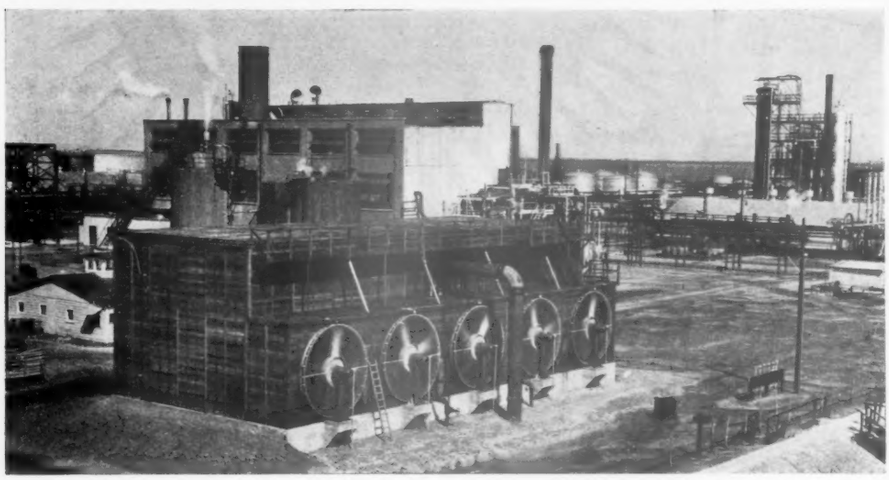
Improved Servicing

A change in the equipment for working on wells was made in the early days of the field when the modern deep-servicing unit became available as the result of the demand for it at Oklahoma City. These units with slight improvements are being used now in the deeper areas. Those for pulling the rods and tubing are skid mounted, have one drum and can be carried on a truck. For more difficult jobs and cleaning out, the units are double drummed with a spudding attachment. These units replaced the old bullwheels and gas engine and the portable standard rig. Several light rotaries have been built for use where they were needed.

The ordinary well generally required cleaning out at about 6 months after being put on the pump. This job sufficed for about 1 year after which the wells generally would go for 3 or 4 years without a major maintenance job. In addition to cleaning out the sand and debris, considerable work has been done shooting zones believed to contain good production. Junk in the hole and other mishaps also caused some workover jobs. Generally the insert pumps used will last about 2 years if conditions are favorable. If the well is cleaned out properly, at least 6 months' service should be obtained.

The amount of pipe in the Oklahoma City wells makes casing pulling attractive to the oil companies and they have given it considerable thought. Generally the pipe recovered is in good shape with about 50 per cent needing rethreading. Ordinarily from 4,500 to 5,000 ft. of the 7-in. casing is pulled and about 3,500 ft. of the 9⅝-in. pipe. Pulling of the casing is done either with a mast or a derrick.

Hydraulic jacks capable of pulling around 200 tons are used and a strain taken on the pipe. From the stretch of the pipe, the amount of free pipe in the hole is calculated and the point for shooting or cutting selected. A light squib is used for shooting which coupled with the strain, result in the jumping of a collar. Where it is desired to have a flat surface up in the hole, the pipe is cut with an inside cutter. This will allow reentry in case it becomes necessary to get back in the hole again. Generally it takes about 2 days to pull the string of casing as the joints are difficult to break.



This five cell, forced-draft cooling tower cools eight million gallons of water per day in a Texas refinery. Water enters the tower through the central pipe at a height of only twenty feet.

Adding 6000 gpm Cooling Capacity

Following a recent installation to cool 12,000 gallons of water per minute, the new tower illustrated brings the mechanical draft cooling capacity for this refiner to a total of 18,000 gpm. When the present program at two plants is completed, 75,000 gpm—more than a hundred million gallons per day—will be pumped to a height of only twenty feet in the distribution systems of the several towers, and cooled by the flow of air from 83 axial flow fans—each twelve feet in diameter.

Through the adoption of adequate capacities, both refineries are provided with controlled cooling water sufficient to maintain plant output at all the seasons of the year.

Foster Wheeler Corporation, 165 Broadway, New York, N. Y.

FOSTER WHEELER

Operation of Supercharged Engines in Pipe-Line Service

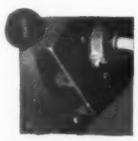
(Continued from Page 38)

of the turbocharger, and the turbocharger was subsequently badly damaged due to overloaded and overheated conditions.

Although many discouraging problems were encountered in the test of this first supercharged engine, sufficient information was obtained to convince all concerned of the practicability of supercharging, particularly by the "Buchi" method.

In August 1940 the second supercharged engine was placed in service by Stanolind. This engine was of the four-cycle type with five 16¼ by 23½-in. cylinders, having a normal horsepower rating of 500 at 225 r.p.m. In October 1940 another turbocharger was placed in service on a 500-hp. five-cylinder 16½ by 24-in. engine. The "Buchi" system was used on both of these installations; however, the turbochargers were much larger machines with a full-load speed of only 12,000 r.p.m. Both turbochargers were equipped with babbitt-lined sleeve-type bearings. This equipment was purchased with the idea of increasing the engine output 50 per cent or from 500 to 750

HERE it is—your "cast-iron" answer to the splashing water and spattering liquids that make motor operation uncertain in many places. It gives you greater-than-ever protection in three important ways:



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One-piece cast-iron frame and end shields completely encase the motor, and offer formidable resistance to rust and corrosion. Ventilating openings are well baffled and contours of the motor shed direct-splashing water or liquids. The low-velocity air intake minimizes sucking in of the spray. Conduit box is waterproof.

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In the coil windings, the combination of Formex wire, a *special* synthetic-resin bond, and a tough external coat of Glyptal 1201 Red sets a new standard for resistance to moisture and to vapor in the air.

Extra Protection **... against wear and tear**

Completely enclosed ball bearings of high load-carrying capacity are standard. A cast-iron enclosure protects the bearing and its lubricant. A simple but effective seal along the shaft excludes liquids from the bearings.

In addition to these "extras," you get basic improvements in operating characteristics, convenience in installation, and clean-cut, compact design. Write today for Bulletin GEA-3595. Specify Tri-Clad on your next splashproof-motor order. General Electric, Schenectady, N. Y.

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Splashproof **MOTORS**

Where wetness is a factor...

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hp. The gear ratio was changed on the pumps, increasing the pump speed from 47 to 55 r.p.m., in order to make full use of the increased horsepower. These units have been in continuous operation since that time. The only difficulty experienced is that the load balance cannot be maintained on the various cylinders of the engine due to overlap of the exhaust impulses in the three-cylinder manifold, as shown in Fig. 2.

Negotiations are now being carried on with the intention of developing a turbocharger with three openings in the exhaust inlet casing for five-cylinder engines.

In Fig. 1 you will note that no two cylinders exhausting into the same manifold follow each other in firing sequence. In Fig. 2 showing the manifolding of a five-cylinder engine, it will be noted that the Nos. 1 and 3 cylinders follow each other in firing order in the same manifold, which condition is unavoidable in a five-cylinder engine unless three, or more, manifolds are used. Exhaust manifolds should be designed to prevent this conditions, otherwise one of the cylinders affected by the overlap of the exhaust will not scavenge properly and will be overloaded.

Table 2 shows operating data on a five-cylinder 500-hp. 16½ by 24-in engine supercharged with a double-inlet turbocharger. Fig. 3 shows hand-pulled indicator cards taken at the exhaust nozzle of each cylinder on this engine and shows the reason for disrupted scavenging and supercharging of the No. 1 cylinder.

TABLE 3

668 hp., 200 r.p.m., 102 b.m.e.p.
Exhaust temperatures were observed at different times during test

Cylinder No.				
1	2	3	4	5
900	610	620	540	500
900	610	640	610	580
900	610	640	600	580
900	630	680	600	590
900	650	690	600	610

From the measurements of weak spring diagrams shown in Fig. 3, it is reasonable to assume that the following back pressures at the middle of the scavenging period are approximately correct.

No. 1 4.5 lb. with pressure increasing
No. 2 1.0 lb. with pressure decreasing
No. 3 2.0 lb. with pressure decreasing
No. 4 0.0 lb. pressure curve level
No. 5 —0.4 lb. pressure curve level
Air pressure at 665 hp., 3 lb.
Pressure (mean) in upper exhaust pipe, 1.4 lb.
Pressure (mean) in lower exhaust pipe, 2.0 lb.

Conclusion

Sufficient experience has been gained from the installations described above to prove that increasing the horsepower of existing pipe-line pumping installations is not only practicable, but economically justifiable. For instance, 250-hp. increase can be obtained by supercharging a 500-hp. engine for an investment of approximately $12,500, including the cost of new gears for increasing the speed of the pump. This is equivalent to $50 per installed horsepower, which is less than half the cost per installed horsepower when purchasing additional pumping units.

The use of supercharging has other advantages which make it attractive for pipe-line service. For instance, it frequently becomes necessary to provide a temporary increase in horsepower and pumping capacity at trunk-line stations handling oil from flush fields or for a temporary peak load to certain refineries. After this peak-load requirement no longer exists a large investment is usually left idle or operating at low capacity. If this peak condition is met by supercharging, the turbocharger and other equipment used in its operation may be moved at a nominal cost to another station, where the additional capacity can be used to advantage.

About the only disadvantage actually encountered in the operation of the last two installations has been our inability to operate these units at loads below the original rated horsepower of the engine. Although the exhaust-driven turbine is supposed to compensate automatically for load variation, it appears that an excess amount of air is forced into the engine for the quantity of fuel consumed, which results in poor combustion. After operating at reduced loads for a few days it is necessary to remove the turbine rotor and clean out the carbon accumulations.

Our experience in the operation of the three turbochargers on pipe-line pumping units indicates that the following improvements should be made for maximum success.

1. The proper method of manifolding to prevent overlapping of exhaust from different cylinders.
2. Provision for some method of regulation of air at low loads to insure proper combustion.
3. Design of turbocharger should be such that it can be installed in different positions to simplify piping and to permit adaption to existing piping. The general appearance of present installations indicate that little or no thought has been given to obtaining a uniform and workmanlike piping job.

Regardless of the difficulties experienced with the first installation and the undesirable features mentioned above, we believe that supercharging of diesel engines for increasing the capacity of existing installations in pipe-line service has tremendous possibilities and that its use will become general throughout the industry.

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Elliott engineers, through long experience, know how to design and apply steam jet ejectors to give exactly the vacuum you want on units or processes, large or small. Ejector units are designed for the job, incorporating the various stages and intermediate condensers necessary to fit them to the process, with steam and water consumption as required.

Elliott ejectors are the modern way to maintain vacuum. Many refineries use them.

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Such a record could be made only by an organization experienced in designing and building heat transfer equipment, and having shop facilities capable of speedily turning out large quantities of fabricated materials.
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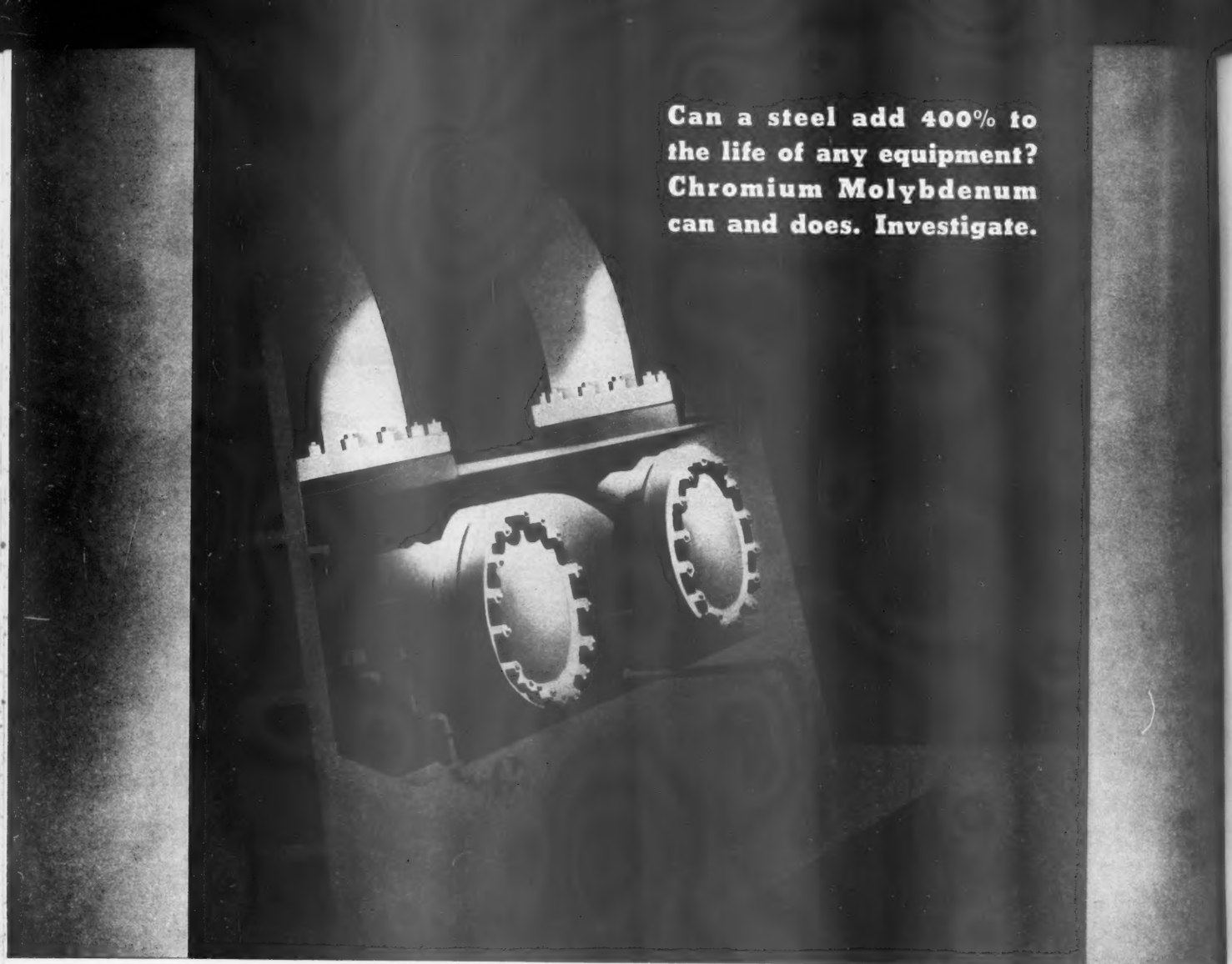

How well the surge blocks stand up to their job has an important bearing on hot oil pumping costs. And cast 4-6% Chromium-Molybdenum Steel has proved that it does lengthen block life, because it not only retains its strength after repeated heating and cooling, but has adequate corrosion resistance.

In one refinery, for example, where high sulphur-content oil is pumped, changing to Chromium-Molybdenum steel more than quadrupled the service of the blocks.

Complete data on Molybdenum steels especially suitable for refinery equipment is contained in Sections 8 and 9 of our technical book, "Molybdenum in Steel". These sections, or the complete book, will be sent free on request to all executives interested in the application of modern steels to meet modern refinery problems and requirements.

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MOLY

QUESTIONS ON TECHNOLOGY

By W. L. NELSON, TECHNICAL EDITOR

Lubricated Gasoline

Can you give us some information on Lubri-Gas? The claim of the manufacturer seems to be that by keeping the engine cool through lubrication of the upper cylinder walls the tendency to knock is eliminated.—W. H. H.

The real merit of the use of upper-cylinder lubrication via gasoline has never been definitely settled. We are not familiar with the particular product sold as Lubri-Gas but we suppose it to be a top-cylinder lubricating oil that is admixed with gasoline.

Numerous refiners and marketers utilize a small amount of lubricating oil in their gasolines (0.5 to 1 per cent and occasionally up to 2.5 per cent). The cost of such an addition is great because the lubricating oil can be sold for much more than the gasoline. This has led to the sale of small bottles of top-cylinder lubricants which may be purchased at filling stations and poured into the gasoline tank along with the gasoline. In this way the refiner can relieve himself of the expense of adding a costly ingredient to the gasoline—and in fact make an extra profit by charging say 25 cents for a four-ounce bottle of top-cylinder lubricant.

In The Oil and Gas Journal of December 8, 1931, Page 28, claims are made that top-cylinder lubricants increase the mileage by 3 miles per gallon, that the top cylinder and exhaust valves are better lubricated, and that no difficulties are encountered with sticking valves or carbon deposits. Others have stated that engine deposits have been decreased or even cleaned from dirty cylinders.

In contradiction, a number of investigators (Conine, The Oil and Gas Journal, Dec. 29, 1932, p. 9) report almost the opposite or at least express doubts as to the claims of sellers of top-cylinder lubricants. The doubters report slightly larger fuel consumption, no decrease in wear, no cooler engine operation and a decrease in power and octane number. The octane number and end points exhibited by lubricated gasolines are stated to be as follows:

	Octane No.	End point
Gasoline	65.5	398
Plus 1 per cent	65.5	428
Plus 3 per cent	64.5	580
Plus 5 per cent	64.0	580

In all cases it appears that refined oils are used. Most of these are light lubricating oils ranging up to S.A.E. 20, although in a few instances refined gas oils or nonviscous neutral oils have been employed. Halogenated petroleum products and sulfur monochloride have also been mentioned. In connection with Lubri-Gas it is quite possible that a particularly effective cylinder lubricant has been developed but the burden of proof should be placed on the marketers of this product.

Octane Number of Blends

When mixing gasolines the octane number does not always come out right. What is the trouble, particularly with benzene blends?—J. E. B.

The many stocks that are blended with base-stock gasolines behave quite differently than would be expected from their octane numbers. If octane number was a purely additive property, the octane number of blends could be computed from a simple equation such as:

$$\frac{P_A N_A + P_S N_S}{100} = N_B$$

In which:

P_A = percentage of blending agent in blend
P_S = percentage of base stock in blend
N_B = octane number of blend
N_S = octane number of base stock
N_A = octane number of blending agent (but most usually the apparent or blending octane number of the agent)

In only a few special instances do the components of the blend behave in a purely additive manner. This is the case if the blending agent is very similar to isooctane in composition (note Items 13-18 in table), or if the blending agent and the base stock are similar to one another in composition (note Item 12). Thus, two natural gasolines, two stocks from the same or similar crude oils, or two cracked gasolines, would be expected to behave in an additive manner.

Most blending agents, however, when used in blends give higher or lower octane-number blends than would be expected. They behave as if they had different octane numbers than the pure material exhibits. The apparent octane numbers of some materials are given in the tabulation on this page. The equation shown above will give reliable results if the blending octane numbers shown in the tabulation are used for N_A. Thus, polymer gasolines behave as if they have very high octane numbers (even 125) although when tested in the pure state they may show an octane number of only 80. This behavior is probably due to the high content of olefin or unsaturated hydrocarbons. Likewise, the aromatic hydrocarbons or blending agents (note Items 19-24) behave as if they have low octane numbers.

In general, the bigger the difference in octane number of the blending agent and the base stock, the greater the deviation from the behavior of additive mixtures. As an example, polymer when added to a 40-octane-number straightrun gasoline may behave as if it had an octane number of 110, whereas if it is mixed with a 70-octane base stock it may behave as if it had an octane number of only 82. Likewise, benzene has an opposite effect in that it increases the octane number of low-octane stocks by only a small amount whereas it behaves in almost an additive manner with higher octane-number base stocks.

Another factor which accounts for the ranges in blending octane numbers that are shown in the tabulation is the fact that the apparent or blending octane number deviates most widely from additive performance when only a small amount of blending agent is employed. Thus, when only 10 per cent of polymer gasoline is used, it may behave as if it has an octane number of 120, whereas if large amounts are used it may behave as if it had an octane number of only 95. Conversely, benzene, when used in small amounts behaves as if it has a very low octane number but if used in large amounts it may act as if it had the octane number of pure benzene.

References are given in which greater detail may be had. Of all of the references, No. 11, i.e., Nash and Howes, is perhaps the most generally comprehensive.

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5. McAllister, S. H.: The Cata. Polymerization of Butylenes by Sulfuric Acid, The Oil and Gas Journal, Nov. 12, 1937, p. 139.
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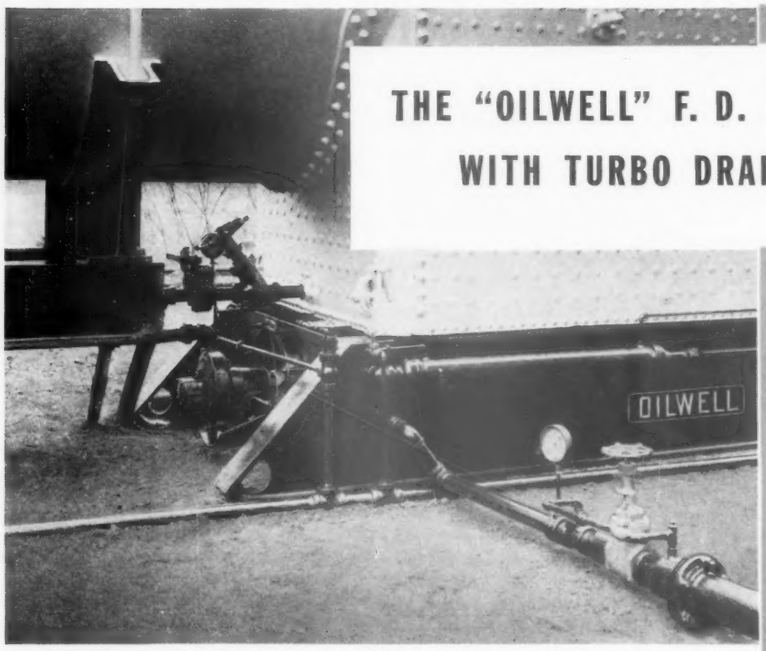
OCTANE NUMBERS OF BLENDING STOCKS

Blending agent—	Oct. No.	Blending Oct. No.	Percentage increase	Base stock—Name	Base stock—Oct. No.	Reference
1. Poly gasoline	80	91-125	115-154	Straightrun	45	6, 11
2. Catalytic polymer	80	95-115	119-154	Straightrun	55	6, 11
3. Catalytic polymer	80	87-105	109-131	Straightrun	65	6, 11
4. Catalytic polymer	80	82-83	103	Straightrun	70	11
5. Unitary cracked gasoline	82	82-110	100-134	Reference fuel	43.6	11
6. Ethyl alcohol	99	106	107	Straightrun	70	10
7. Joiner cracked gasoline	73	76	104	Joiner straightrun	56	8
8. Ethyl benzene	96	100	104	Straightrun	70	9
9. Isopropyl ether	98	102	104	Straightrun	70-74	1, 9
10. Cracked gasoline (Pa.)	76	78	103	Pa. straightrun	47	7
11. Methyl ethyl ketone	99	102	103	Straightrun	70	10
12. Joiner cracked gasoline	71	72	102	Joiner reformed	71	8
13. Isopentane	90	92	102	Straightrun	70	9
14. Acetone	100	100	100	Straightrun	70	10
15. Isooctane (comm.)	90	90	100	Straightrun	65-74	3, 9
16. Isooctane (comm.)	95	92-94	98.5	Straightrun	65-74	3, 9
17. Isooctane (comm.)	100	91-100	95.5	Straightrun	65-74	1, 3, 5, 9
18. Isooctane (hot acid)	100	90-97	93.5	Straightrun	74.3	5
19. Sulfur dioxide extract	91	90	99	Straightrun	63.4	2
20. Sulfur dioxide extract	98	94-96	97	Straightrun	63.4	2
21. *m* and *p*-Xylene	100+	96	96—	Straightrun	70	9
22. Toluene	100+	94	94—	Straightrun	70	9
23. Benzene	97	84-91	89	Straightrun	45-70	6, 9
24. *o*-Xylene	100+	88	88—	Straightrun	70	9

Time-Proved Design



THE "OILWELL" F. D. PORTABLE DUCK'S NEST WITH TURBO DRAFT-FAN AND BURNER

Using the time-proved, forced-draft method of firing, the "Oilwell" F. D. Portable Duck's Nest has repeatedly demonstrated money-saving advantages in the operation of oilfield steam power plants. The unit comprises a refractory-lined, welded, steel frame with built-in, steam-turbine driven draft-fan and burner arrangements for firing with either gas or oil or a combination of both. It can be furnished for locomotive-type oilfield boilers of any size or make.

ADVANTAGES . . .

Increases boiler output. In a furnace of ample volume, fuel and air are thoroughly mixed, causing early and complete combustion with no flames entering the tubes. Positive-pressure (provided by forced-draft) fills the entire firebox with the products of combustion and results in uniform flue-temperature.

Reduces transportation and installation costs. Entirely eliminates the use of stacks.

Saves fuel and water. Uses only a small percentage of the steam required for either a stack jet or a steam atomizer (for oil firing).

NEW INTERCHANGEABLE PARTS AND ACCESSORIES

keep "Oilwell" and Wilson-Snyder Steam and Power Slush Pumps modern and up-to-date

Constructed in accordance with time-proved design principles for oilfield service, "Oilwell" and Wilson-Snyder Slush Pumps *are not* made obsolete by subsequent improvements. As improvements are made they are incorporated in fully interchangeable parts and accessories which can be applied to pumps in service. Send now for information on the following new developments:

- ★ **Type "HD" Roller-Bearing Fluid Liner Spacers**
- ★ **Improved Type "C" Streamlined Valves and Seats**
- ★ **Roller-Bearing Valve Gear (for No. 20 and "Super" Steam Pumps)**

STEAM SLUSH PUMPS

	No. 16	No. 18	No. 20 (two sizes*)	"Super" (two sizes*)
Steam-Cylinder Diameter by Max. Liner Size by Stroke ..(Inches)	12x6 x16	14x7¼ x18	16¼x7¾ x20	16¼x7¾ x20
Number and Size of Suction Openings....	1-6"	3-10"	1-10"	3-10"
Hydraulic Test Pressure, Discharge .....(Lbs./Sq. In.)	2000	3000	4000	4000
Maximum Working Pressure, Discharge .....(Lbs./Sq. In.)	1200	1800	2500	2500
Maximum Steam Pressure..(Lbs./Sq. In.)	300	400	350	350
Normal Operating Speed .....(R.P.M.)	55	50	50	50
Theoretical Displacement at Normal Speeds .....(G.P.M.)	410	622	771	771
Stalling Load at Max. Steam Pressure ....(Pounds)	33,800	61,700	72,600	72,600
Gross Weight: Domestic.....(Pounds)	8,300	14,400	20,300	20,850
Export.....(Pounds)	8,800	15,000	21,200	21,800

**Both the No. 20 and the "Super" Pumps are also available with 15" diameter steam cylinders designed for a maximum working pressure of 400 lbs. per sq. in.*

"Oilwell" No. 20 (16¼" x 7¾" x 20") Steam Slush Pump with Type "HD" Liner Spacers and Roller-bearing Valve Gear.

Principles increase output and reduce operating cost of "OILWELL" Machinery

THE "OILWELL" NO. 64 UNIVERSAL HOISTING UNIT

Simplicity based on time-proved design principles makes this compact and portable hoisting unit outstanding in performance and low-cost operation. Features include:

Two speeds to the rotary and four to the drum.

Instantaneous reversing — steam-rig simplicity of controls.

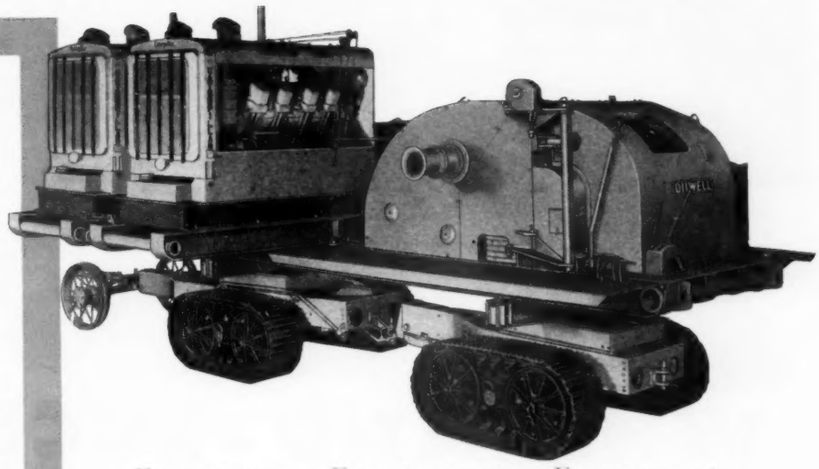
May be driven by either internal-combustion engines or steam and is easily converted in the field. Either one or two internal-combustion engines may be used, with a wide choice as to capacity, fuel and make. When two engines are used, a dual drive permits compound or separate operation.

Extreme flexibility in setting power pump is provided by idler pulley.

Friction-clutch rotary drive facilitates spinning pipe and saves time in making trips.

Roller chains and cut-tooth, heat-treated steel sprockets in sealed oilbath enclosures provide all speed reductions.

All grease lubrication fittings are grouped on a central panel.



Easy to move...Easy to operate...Easy to service

One of several similarly equipped and mounted "Oilwell" No. 64 Universal Hoisting Units recently shipped to a South American oil field. In service, the hoisting unit remains on its wagon mounting. A special derrick substructure permits backing the assembly into place.

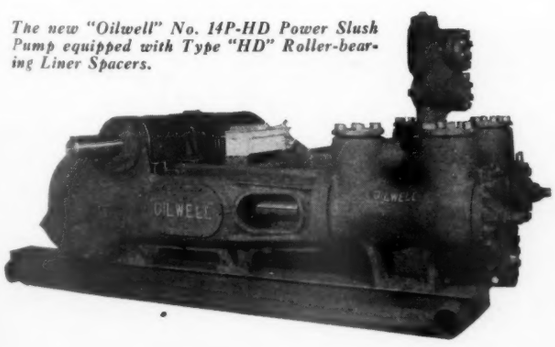
SPECIFICATIONS

Recommended Max. Drilling Depth: with 4½" Drill Pipe (6 lines)..	(Feet)	5000
Recommended Max. Drilling Depth: with 3½" Drill Pipe (6 lines)..	(Feet)	6000
Drum: Spool Diameter	(Inches)	16
Width between Flanges	(Inches)	26½
Brake Rims, Diameter by Face Width	(Inches)	46x7⅛
Length, Over-all	(Feet)	24
Height, Over-all	(Feet)	6½
Width, Over-all without Catheads	(Feet)	8
Weight, Complete for Internal-Combustion Engine Drive but less Engine and V-belts	(Pounds)	21,850

TWO *New* Power Slush Pumps to meet more severe drilling conditions:

☆ **"OILWELL" NO. 14P-HD (7¼" x 14")** ☆ **WILSON-SNYDER NO. 18-P (7¼" x 18")**

The new "Oilwell" No. 14P-HD Power Slush Pump equipped with Type "HD" Roller-bearing Liner Spacers.



Fully recognizing the increasing severity of operating requirements for power slush pumps, "Oilwell" and Wilson-Snyder have developed, time-proved, and introduced two sturdy new models. The complete line of "Oilwell" and Wilson-Snyder Slush Pumps (listed in the following table) includes a dependable pump of efficient size and ample capacity for every drilling need.

POWER SLUSH PUMPS

		No. 12-P	No. 612-P	No. 16-P	No. 14P-HD	No. 18-P	No. 20-P
Maximum Liner Size by Stroke	(Inches)	5x12	6x12	6x16	7¼x 14	7¼x 18	7¼x 20
Hydraulic Test Pressure, Discharge	(Lbs./Sq. In.)	2000	3000	3000	4000	4000	4500
Maximum Working Pressure, Discharge	(Lbs./Sq. In.)	1200	1800	1800	2500	2500	3000
Maximum Recommended Speed	(R.P.M.)	65	65	60	60	55	55
Maximum Working Pressure with Full-Size Liners at Max. Speed	(Lbs./Sq. In.)	540	520	520	765	765	825
Theoretical Displacement at Maximum Speed	(G.P.M.)	251	364	447	570	673	850
Maximum Recommended Brake Horsepower Input at Max. Speed	(H.P.)	92	129	159	300	353	480
Gross Weight with Short Skids: Domestic	(Pounds)	7500	10290	14785	23600	28700	44416
Export	(Pounds)	7900	10880	15393	24300	29700	45931

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United States Steel Corporation Subsidiary

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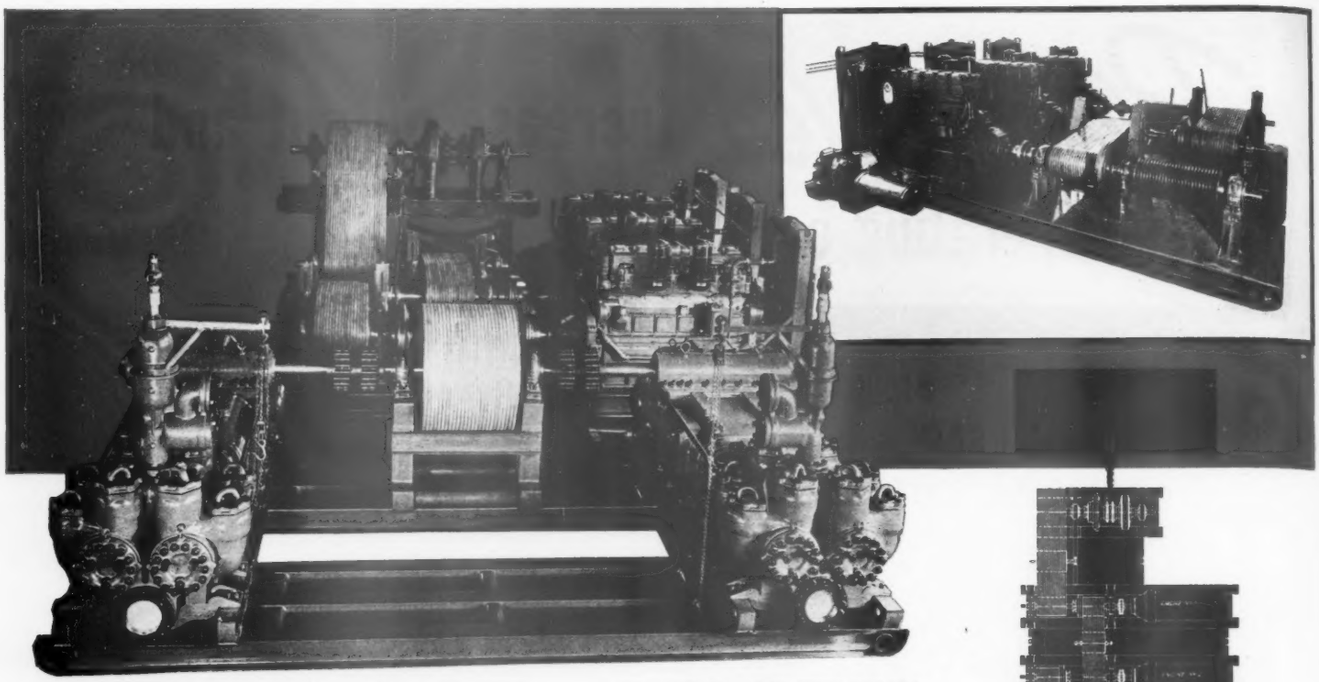
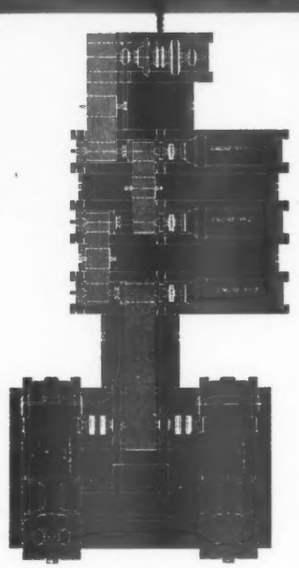




WHELAND-LUCEY

DIESEL ROTARY DRILLING EQUIPMENT

FOR DRILLING TO 12,000 FEET

Looking for SPEED . . . POWER . . . PERFORMANCE . . . ECONOMY? Here's the hit of the oilfields, both domestic and foreign. It's a winner no matter where you set it up! The combination of powerful engines and rugged auxiliary equipment built specifically for this power, plus the expert engineering arrangement, gives you maximum SPEED . . . POWER . . . PERFORMANCE . . . SAFETY and ECONOMY.

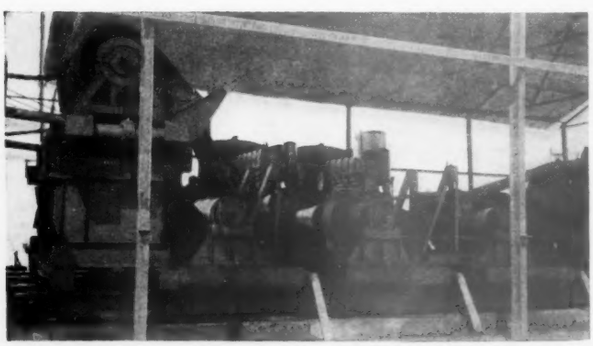
BRIEF FACTS: Full Diesel engines of 200 to 300 Horse Power mounted on toboggan-type skid bases. Flexible hook-up arrangement permits simple and easy changeover for compounding engines to drive either drawworks or pumps. Pedestals are so designed so that belts can be easily removed when it is necessary to take the equipment down for transportation. Friction clutches installed in sheaves where necessary. Belt tighteners between engines 1 and 2 and 2 and 3 and between engine #1 and reverse clutch. Power shafts are on self-aligning roller bearings.

Pumps are Wheland-Lucey HP-15000-AD, 7¾ x 18 in., and are on ground level with engines. Pumps are driven from one sheave, the shaft of which is connected to the two pump pinion shafts by three-piece chain couplings which permit operation of either pump as desired.

Reverse clutch is supported on a substructure at derrick-floor level. The entire hook-up is arranged for field transportation in sections.

Write for bulletin No. 41 which illustrates and describes the complete line of LUCEY Equipment.

Photos below show equipment in use in field.



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IN developing WeldELLS we gave a lot of consideration to the common-sense principle that the *easier* it is to handle a job, the *better* it will be handled. The precision quarter-marks at each end of every WeldELL are one of many examples of this.

There are many times when these convenient reference marks save a lot of troublesome figuring—help eliminate errors—make it easier to turn out a perfect job. At such times this feature alone would justify your selecting WeldELLS. But you also have the seven other sound reasons listed opposite.

Of course it costs us something to provide these betterments that are combined only in WeldELLS, but giving you this added value is only in keeping with principles that Taylor Forge has observed for more than 40 years: First, *sound engineering design—then maximum utility, convenience, and economy.*

Some of these features cut installation costs. Others add to the value of the finished job . . . Yet WeldELLS cost no more.

Write for Taylor Forge Catalog 401. It contains not only complete information on Welding Fittings and Forged Steel Flanges, but also a lot of useful engineering data.

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WeldELLS

Seamless Pipe Fittings for Welding

OTHER EXTRA-VALUE FEATURES

You can't ask for a single thing in welding fittings that WeldELLS do not have. No other fittings for pipe welding combine these eight features. In addition to quarter-markings (described opposite) the features are:

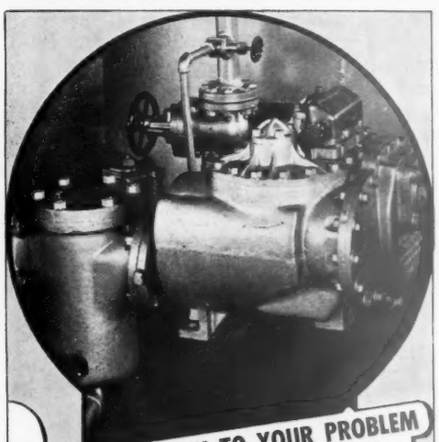
1. **Seamless** — greater strength and uniformity.
2. **Tangents**—keep weld away from zone of highest stress—simplify lining up.
3. **Selective reinforcement**—provides uniform strength.
4. **Permanent and complete identification marking**†—saves time and eliminates errors in shop and fields.
5. **Wall thickness never less than specification minimum**—assures full strength and long life.
6. **Machine tool beveled ends**—provides best welding surface and accurate bevel and land.
7. **The most complete line of Welding Fittings and Forged Steel Flanges in the World**—insures complete and undivided responsibility.

†Since the marking is pressed into the metal before forming, and since the manufacture of the fittings is carried out at a forging temperature, each in effect receives a heat treatment after the operation. The indentations have no sharp corners or edges and the marking has no effect on the strength of the fitting.

CRC

PIPE LINE CONSTRUCTION EQUIPMENT

CRUTCHER-ROLFS-CUMMINGS
Pipe Line Equipment and Materials
Houston, Texas, U. S. A.



HERE'S THE KEY TO YOUR PROBLEM
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NO JOB TOO SMALL

Whatever your problem may be—it's solved by Brodie Meters when it concerns shortages or losses on pipe lines. Capital outlay in stations and tanks is likewise minimized.

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WORKING PRESSURES UP TO 1000 LBS. PER SQ. IN.

WRITE FOR BULLETIN 560A

Pipe-Line Activity

Stanolind to Lay Gathering System in Slaughter Field

FORT WORTH, Tex.—Following completions of Richardson Pipe Line Co.'s outlet to the Slaughter field in the northern part of the Permian basin of West Texas, announcement has been made that a new individual gathering system would be built in the field to run oil into the new line. The Richardson Pipe Line Co. placed its carrier in operation about 2 weeks ago. The line, originating at Sundown in southwestern Hockley County, runs to the Wasson pool to the south and in Yoakum County where it ties into the Aloco Pipe Line Co.'s carrier to Hobbs, N. M., and thence into the Atlantic Refining Co.'s trunk line to the Gulf Coast. The Richardson company's carrier involves 31 miles of 6-in. line.

The new gathering system for the Slaughter field and which will feed oil into the Richardson company's line is to be constructed by Stanolind Pipe Line Co. The line will serve only the Stanolind wells in the field. The system will tie into the Richardson company's terminus at Sundown. It will involve the laying of 3 miles of 6-in. line, 4 miles of 3-in. laterals, 2 miles of 2-in. laterals, and 5 miles of 4-in. discharge lines.

Governor Ratner Announces Kansas Pipe-Line Projects

TOPEKA, Kans.—Gov. Payne Ratner last week stated Kansas' pipe-line capacity would be increased from 230,000 to 280,000 bbl. daily by construction planned by four purchasing companies. The new lines should end the threat of a transportation shortage for the time being. The June allowable in Kansas is 232,000 bbl. a day. The new construction includes:

White Eagle Co. will build 23½ miles of 10-in. line in Rice County, increasing capacity from 42,000 to 70,000 bbl. a day. This company also is replacing old pumping equipment on its line from Chase to Valley Center. Failure of the pumps has caused a reduction in the line's capacity.

Kaw Pipe Line Co. will build 37 miles of 10-in. line in Barton and Rice counties, increasing daily capacity from about 35,000 to 60,000 bbl. This firm also will build 30 miles of 6-in. line in Rooks, Ellis and Phillips counties but it is a connecting line so no increased run can be expected with present pumping equipment. While this project has been contemplated for several months by companies participating in the ownership of Kaw Pipe Line, complete authorization for the undertaking has not been granted.

Skelly Oil Co. will build 30 miles of 6-in. line in Barton and Russell counties. This also is a connecting line. Phillips Petroleum Co. has completed 5½ miles of 6-in. line near McPherson, increasing capacity from 20,000 to 26,000 bbl. a day.

Pacific G. & E. Will Start Laying Line to Eureka, Calif.

LOS ANGELES, Calif.—Pacific Gas & Electric Co. of San Francisco will soon start construction on a gas line to supply the city of Eureka, Calif., with natural gas from the state's most northerly field so far discovered. The field is situated 15 miles southeast of Eureka, which is on the California coast, 240 miles north of San Francisco. For lack of a marketing outlet the gas field has been shut in to date.

Crockett Gathering System Formed To Take Noelke Field Crude

FORT WORTH, Tex.—The 8-mile 3-in. welded pipeline outlet to the Noelke field in Crockett County, West Texas, built last April by George Kimble of Wichita Falls, Tex., has been taken over by operators in the field and the new management company of Crockett Gathering System formed for its operation. Recent extensions to the field have indicated that considerable drilling will be carried on during the coming months. The outlet for the pool leads from the field to the Texas-New Mexico Pipe Line Co.'s pump station near Iraan in Pecos County. It was built after the Texas Co. agreed to purchase 500 bbl. of oil daily from the field.

Officers of the Crockett Gathering System are: President, O. G. Leichliter of Dallas, Tex., who is president of Mudge Oil Co.; vice president and manager, George McGarr who is an officer of the M. & M. Production Co. of Abilene, Tex.; Leif Olson of the Olson Drilling Co. and Olson Oil Co.; John I. Moore of Moore Brothers, Inc., of Midland, Tex., who is secretary-treasurer, and Robert Turbin of Midland, who is the attorney.

Plantation Line Rights-of-Way Are Acquired in Louisiana

NEW ORLEANS, La.—H. M. Krause, with headquarters in Hammond, is now engaged in securing right-of-way for the Plantation Pipe Line Co., a Delaware corporation, through the parishes of St. Helena and Tangipahoa. The pipe line will extend from Baton Rouge to Greensboro, N. C., thence on to Norfolk, Va.

The right-of-way will require a strip of land 30 ft. in width for the 12-in. pipe and landowners were being paid at the rate of 25 cents a rod, or about $80 a mile. All damages to timber or other property will be adjusted separately. It was estimated that 22 miles of the necessary right-of-way will be in St. Helena Parish and several miles more will be in the northern section of Tangipahoa Parish. Under a legislative act of 1938, the pipe line will probably be assessed at about $15,000 in St. Helena Parish alone.

Pure Plans 36-Mile Line In Southern Oklahoma

A 36-mile extension of the present 16-mile 6-in. crude line is planned by Pure Oil Co. from its Cumberland field in Bryan and Marshall counties, Oklahoma, to the Fitts pool of Pontotoc County, Oklahoma. While details are now being worked out by R. E. Young, manager of Pure's pipe lines in the Mid-Continent area, it is learned that the extension will permit the company to move its own production from the Cumberland and Fitts fields to either the Chicago market or to the Smith Bluffs, Tex., refinery, the present terminus of its Oklahoma output.

Increase Is Reported for Texas Pipe-Line Valuation

AUSTIN, Tex.—Totaling $80,294,000, preliminary evaluations for Texas pipe lines and railroad companies announced Wednesday by state Comptroller George Sheppard showed a gain of $1,631,100 over the valuations for intangible tax assessment purposes for 1940.

Class A pipe-line companies, with Humble Pipe Line Co.'s $8,450,000 preliminary valuation in the lead, totaled $35,806,200. Sinclair Refining Co. had intangible assets estimated at $6,188,000. Other firms listed in the Class A category were Atlantic Pipe Line Co. $5,000,000, Gulf Refining Co. $3,660,400, Magnolia Pipe Line Co. $2,852,000, Shell Pipe Line Co. $3,200,000, Stanolind Pipe Line Co. $732,500, Texas Pipe Line Co. $2,563,300, Texas-New Mexico Pipe Line Co. $3,125,000.

All classes of pipe lines added together had 1941 preliminary intangible assessments of $48,671,000, compared to $47,039,900 final assessments for 1940. Preliminary assessments for railroads this year were fixed the same as last year, at $31,623,000.

Columbia Will Dispose of Panhandle Eastern Stock

NEW YORK.—Columbia Gas & Electric Corp. has announced an agreement disposing of its holdings in the Panhandle Eastern Pipe Line Co. and termination of various suits in a long-standing controversy involving itself, the federal Government, Columbia

Pipe-Line Personalities . . . . . D. P. Hartson

Trinity Court Studio

D. P. HARTSON, operating manager of the Pittsburgh & West Virginia Gas Co., and the Equitable Gas Co., of Pittsburgh, is a native of New York State. He was born and educated in the vicinity of Syracuse. He was graduated from Colgate University in 1913 and was employed by the United Gas Improvement Co. until 1920.

In that year he became division superintendent of the Equitable Gas Co. Since then he has served the company as gas-distillate engineer, gas engineer, superintendent of production and transportation of Pennsylvania and manager of the system development department.

He is now operating manager of the Pittsburgh & West Virginia Gas Co., the Equitable Gas Co., Philadelphia Oil Co., and the Finleyville Oil & Gas Co., being elevated to those posts in 1931. Since 1927 he has been the Pittsburgh representative in working out production and engineering problems in the eastern Kentucky gas field of the Kentucky & West Virginia Gas Co.

Mr. Hartson is married and the father of three children, two girls and one boy. Among the many civic and professional organizations of which he is a member are Engineers Society of Western Pennsylvania, Pittsburgh Personnel Association, Pittsburgh Chamber of Commerce, Pennsylvania State Chamber of Commerce, technical section (chairman 1940) American Gas Association, American Petroleum Institute, West Virginia Oil and Natural Gas Association and the Pennsylvania Natural Gas Men's Association.

Oil & Gasoline Corp., and the Missouri-Kansas Pipe Line Co. The agreement, reached June 7, is subject to the approval of the Securities and Exchange Commission and the federal District Court in Delaware.

"This settlement," said the company, "includes all of the features involved in the plan for terminating the government antitrust litigation heretofore conditionally approved by the federal District Court in Delaware and goes farther in that it provides for the distribution of the common stock of Panhandle Eastern Pipe Line Co. now held by Missouri-Kansas Pipe Line Co. and Columbia Oil & Gasoline Corp.

"It further results in Columbia Gas receiving full payment for all of its holdings of Columbia Oil debentures, so that it will receive a larger total amount of cash than under the old plan. Consummation of the present settlement will also accomplish termination of the pending antitrust litigation against the two Columbia companies."

Among the features of the agreement is the provision for the election of a new board of directors of Panhandle, one member to be nominated by Columbia Oil, one by Missouri-Kansas and "the other 10 members to be independent directors mutually acceptable to these two stockholding corporations."

Columbia Oil and Missouri-Kansas will coincidentally dispose of their Panhandle common stock, and Panhandle "will refund its Series A preferred stock and retire its Series B preferred stock, now both held by Columbia Oil." Panhandle will acquire from Columbia Gas the latter's subsidiaries, Michigan Gas Transmission Corp. and Indiana Gas Distribution Corp., thereby giving Panhandle ownership of the pipe line which transports its gas to Detroit.

Simrall Lays 4-In. Line To New Michigan Field

MOUNT PLEASANT, Mich.—Simrall Corp. is completing the laying of a 4-mile 4-in. crude line from the Lincoln field to a loading rack at Reed City, Mich. Previously Leonard Pipe Line Co. laid a 4-mile 4-in. line from the field to a rack at Oliver. The Leonard line is transporting oil from Pure Oil Co.'s wells after the crude is gathered by Pure. Simrall previously had been gathering Weber Oil Co. crude and delivering direct to refinery and rail points by truck.

Work Started on Natural-Gas Line From West Ranch Field

SAN ANTONIO, Tex., June 16.—Work was to start this week on Magnolia Petroleum Co.'s second trunk line for natural gas out of the West Ranch field in Jackson County, Texas, opened by the company several years ago. The line is to be completed by November 1, 1941.

It will be 190 miles long, running from the West Ranch field to Beaumont, Tex., and will be made up of 160 miles of 14-in. welded line and 30 miles of 16-in. welded line on the Beaumont end. Daily capacity will be 50,000,000 cu. ft. without booster stations.

With the construction of the new line, Magnolia returns to one of its first activities—that of handling and marketing natural gas. Back in 1929, the company withdrew from this activity with the disposal of its extensive transportation system as well as sales and purchase contracts.

Gulf Refining Co. Takes Bids For Looping Program

Bids for construction of 13 separate loops for the Gulf Refining Co. 732-mile 10-in. pipe line from Jenks, in Tulsa County, Oklahoma, to Cincinnati, Ohio, Toledo and Pittsburgh, were received by the company this week and the contract is expected to be let in a few days.

The first of the loops will be near Jenks and will be about 16 miles long. All of the other 12 loops will be similar in length and most of them will be in the neighborhood of Dublin, Ind., where the Gulf's line trends in several directions to serve its three central-eastern refineries.

Sinclair Lets Contract for Dallas-Fort Worth Gasoline Line

FORT WORTH, Tex.—Sinclair Refining Co. has let contract to Monarch Construction Co. for the building of a 33-mile gasoline pipe line from its refinery at Fort Worth to its wholesale distributing station at Dallas, Tex. Work is to start on July 1 and the carrier will be of 3-in. pipe. The company has also indicated that it will build a new wholesale distributing dock at the Dallas end of the line, however, this is undecided.

Sinclair Pipe Line Co. has been increasing its daily oil take from several North Texas fields and has also built new gathering systems and outlets for several recently discovered fields in the North Texas district. Newest of these is a 4-in. line from the Anderson-Kerr field of northern Cooke County which will connect with the firm's carrier from its Walnut Bend field in the same county and thence south to the Fort Worth refinery.

Skelly Will Lay 33-Mile Line in Western Kansas

WICHITA, Kans.—Skelly Oil Co. is preparing to lay a 33-mile 6-in. crude-oil line from the Bloomer pool in Ellsworth, Rice and Barton counties, Kansas, to the Hall-Gurney pool in southern Russell County, Kansas. It is expected that construction work will be under way some time in July.

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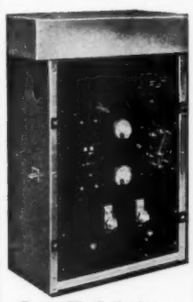

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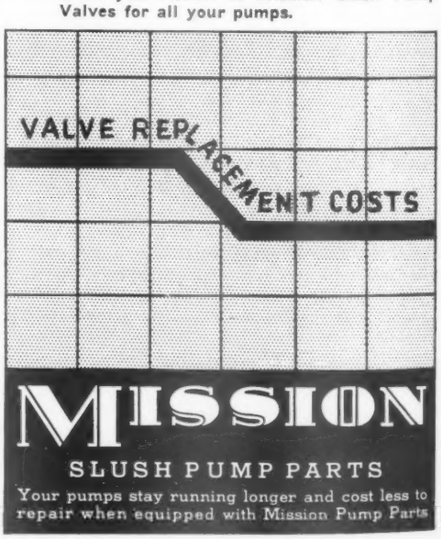
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FIELD DEVELOPMENTS...

HIGHLIGHTS FROM THE WEEK'S NEWS—

All classes of completions showed an increase during the past week which topped the previous high for the year by 17 wells. Oil wells increased over the week ended June 7 by 17, gas wells by 22 and dry holes by 28, making a total advance for the week of 67 completions. Among the causes of the increase are accumulated reports from the gas-producing areas of eastern Kentucky and Montana, but most of the active areas show increases due to the recent speedup of drilling.

The trend of Kansas development whereby pools of all sizes are stepped out regularly for distances of ½ mile or more continues and is adding much proven territory to the state's reserves. Particularly in the Arbuckle, dry holes have ceased to have much meaning. As development continues, the dry holes are often surrounded by producers and are found to be due mainly to filled sinkholes on the old erosion surface at the top of the Arbuckle. Wells drilled into these sinkholes are naturally low as the top of the lime has dropped off precipitously a matter of 20 to 40 ft., and these readings transferred to maps show structures which do not actually exist. Operators in Kansas might consider a little whipstocking of dry outposts with profit.

Possibly the most important development of the week was the discovery of oil in a test midway between Slaughter and Wasson. This does not, necessarily, link the two fields. In fact present opinion is that it does not but the possibility cannot be ruled out at this time. If the two fields are ultimately joined, the area would be much greater than that of the East Texas field and many did not believe that was a single accumulation just 10 years ago.

The Illinois Devonian play has received a setback through water intrusion, but the last act has not been played. The top of the structure has not yet been tested to the Devonian and the flank wells that have been drilled prove the existence of oil in that formation.

ILLINOIS: The Devonian does not appear likely to produce at Patoka and Louden's latest Devonian test showed only salt water. The poor record of the Louden Devonian to date does not condemn the field for deep production as two of the three wells were well down on the west flank of the structure and the third was almost at the west edge (p. 84).

KANSAS: Continued development in the Greenvale sector of Russell County appears likely to link the main pool to North and Northwest Greenvale and, eventually, to tie the whole area into Hall-Gurney. Chase and Doran are extended and Westgate-Greenland brought in a 3,000-bbl. well which either extends Hall-Gurney 1½ miles south or is the discovery well of a new pool (p. 73).

OKLAHOMA: Guthrie is limited by two dry holes on the south. A new Wilcox pool is indicated west of Ramsey in Payne County (p. 72).

NEBRASKA: The discovery well in the deep Hunton pay holds up well. Several new operations are started with that pay as an objective (p. 73).

MONTANA: Shallow gas development continues with three wells in the Cedar Creek field, just across the North Dakota line and four in Bowdoin (p. 92).

MICHIGAN: The Reed City discovery in Osceola County has revived the hopes of Michigan operators as a dozen new tests are in prospect in the immediate future. The new field is outside of the main belt of production and will encourage additional prospecting along the trend. A new gas field has been opened up in the same county in the Michigan stray at 2,000 ft. and another gas field has been found in the stray in Isabella County. Gulf's deep test is new well in the Niagara lime (p. 96).

WEST TEXAS: Texas Co.'s wildcat in Terry County, about midway between Slaughter and Wasson, is showing oil in dolomite. This well is not believed to form a connection between the two large fields but may represent discovery of a new field of considerable size. Prospecting for the deep pay at Wasson is under way in two tests, one 7 miles north and the other 10 miles northeast of the discovery. Slaughter is extended 3 miles north of the west end in what may be a new pay. In the southern sector, a test 1 mile east of Kermit picked up production in a new sand. Three Abell wells missed the Simpson pay and are testing the Ellenburger (p. 78).

NORTH TEXAS: A Caddo lime discovery in western Clay County promises additional development for the area as it is surrounded by small fields which have irregular production from the Strawn. Deeper development of these fields may soon result. A second Mississippi lime pool in Young County is indicated. Ellenburger discoveries in Electra, Bindell and Worsham have been gaged at 27 bbl. in 4 hours, 600 bbl. and 176 bbl., respectively (p. 70).

WEST CENTRAL TEXAS: A shallower pay has been found in the new Wimberly pool in Jones County (p. 70).

EASTERN KENTUCKY: The gas play is going strong with 14 completions totaling 5,743,000 cu. ft. (p. 90).

CALIFORNIA: Shell is starting a second test in the Raisin City area. A new deep pay has been found in the Rincon field, Ventura County (p. 86).

EAST TEXAS: The wildcat play in this area is gaining in impetus as 14 new tests are started. East Long Lake is undergoing rapid development (p. 75).

NORTH LOUISIANA: Wilcox production has been found between the Olla and Jena fields in La Salle Parish. A Smackover lime test has started in Carroll Parish (p. 99).

TEXAS GULF COAST: Maurbro is extended 3,000 ft. southeast and outside the limits of the original block controlled by Humble. Alta Loma and Garwood also appear to be extended as tests show favorably (p. 89).

LOUISIANA GULF COAST: Vinton is the latest of the old shallow domes to get flank prospecting as two deep tests are scheduled to start. A new sand has been picked up at 7,620 ft. at Barataria. Amerada's test 1,100 ft. east of the Port Allen discovery is showing oil above the discovery pay (p. 93).

SOUTHWEST TEXAS: The new sand at Midway is showing 1 mile to the west and La Rosa also appears to be extended 1 mile to the northwest. Continental's Wilcox test in Live Oak County cores sand with an oil odor (p. 76).

COMPLETIONS IN ALL FIELDS . . .

(Week Ended June 14, 1941)

	Oil	Gas	Dry	Total	1941 total comp. to date	1940 total comp. to date
N. Y., Pa., and W. Va.	93	18	7	118	2,515	2,164
Ohio	10	14	14	38	692	554
Indiana	2	0	3	5	207	154
Kentucky	5	15	11	31	302	215
Michigan	7	2	9	18	385	564
Illinois	63	0	14	77	1,467	1,524
Kansas	32	1	5	38	839	739
Oklahoma	24	1	16	41	679	825
Nebraska	0	0	1	1	40	4
Missouri, Iowa	0	0	0	0	9	13
Texas:						
North Central Texas	34	0	25	59	1,303	1,427
West Texas	38	0	1	39	911	985
East Texas	16	0	8	24	525	299
Texas Panhandle	5	0	0	5	234	280
Texas Gulf Coast	19	1	4	24	487	594
Southwest Texas	27	3	11	41	806	980
Total Texas	139	4	49	192	4,266	4,565
North Louisiana	13	1	3	17	269	281
Gulf Coast Louisiana	17	0	4	21	391	474
Total Louisiana	30	1	7	38	660	755
Arkansas	4	0	5	9	76	77
Mississippi and Southeast	8	0	3	11	116	88
Montana	2	8	1	11	112	89
Wyoming	2	0	0	2	63	65
Colorado, Utah	1	0	0	1	18	4
New Mexico	2	0	0	2	224	346
California	22	3	3	28	468	521
Total United States	446	67	148	661	13,135	13,266
Total previous week	429	45	120	594		
Week ended June 13, 1940	409	29	123	561		

Caddo Lime Produces West of Browning Field, Clay County

By R. MARNE SANFORD

WICHITA FALLS, Tex., June 16.—A Caddo lime discovery well of some magnitude was promised as the week closed at the Bridwell Oil 2 Meyers, Thompson Survey, about 4 miles southwest of Blue Grove and just southeast of the Deer Creek community. After flowing by heads for several days the past week it was last reported shut in for storage and final gage.

SUMMARY OF COMPLETIONS

North Texas

	No.	Bbl.	Footage
Oil: Hull Silk	2	600	8,168
Voth	4	254	5,498
K.M.A.	3	650	12,182
Other fields	3	312	8,769
Miscellaneous fields	15	2,317	34,700
Wildcats	2	108	9,892
Dry: Voth	2	.....	2,983
Miscellaneous fields	10	.....	13,866
Wildcats	4	.....	5,432
Total	45	.....	101,490

West Central Texas

	No.	Bbl.	Footage
Oil: Fields	2	211	4,165
Wildcats	1	36	3,070
Dry: Fields	4	.....	7,544
Wildcats	5	.....	12,979
Total	12	.....	27,758

It is porducing through 60 perforations in the casing from 5,776-92 ft. opposite saturation in the Caddo lime which has been treated with 3,000 gal. of acid. One of the best gages early in the week was 100 bbl. of oil in 3 hours into storage.

Not a great deal is known, geologically, of the producing conditions accompanying the discovery. However, several key points for future correlation have been picked. The discovery is about 6,000 ft. north and slightly east of the operator's 1 Meyers, which was carried to the Ellenburger lime at 6,000 ft. The first test for the area found some 10 pay sections, but all were noncommercial. The hole was abandoned but not plugged and after several months oil was found to be flowing from the top of the casing. This test will be cleaned out, reworked, and completed as soon as 2 Meyers is officially on production.

About 4 miles west of the discovery is the Browning field opened to production from the 3,900-ft. Strawn level 2 years ago by Col. L. T. (Bobby) Burns, Wichita Falls. Shell Oil Co., Inc., drilled a deep failure as a south offset to the Browning field discovery well. However, Burns succeeded in drilling several more producers in the area. This week Burns completed a new ¼-mile-east extension to the field. Just north of the No. 2 Meyers discovery is an old well drilled by Nebraska Oil Co. some 6 years ago which was completed for a small producer from approximately the 3,000-ft. level. Failures were drilled on two sides and the area was then quit.

About 3 miles south of the Meyers discovery is the Burns 1 Wynn, Section 34, H. Williams Survey, Abstract 704, which was quit 2 years ago at a depth of 5,200 ft. after finding only slight shows in the Strawn section. It is being readied for deepening to the Caddo lime in search of the pay found in the Meyers well.

Burns Extends Browning Field to the East

L. T. Burns' extension producer to the Browning field is 1 Southerland, Section 94, J. H. Belcher subdivision, ¼-mile east of production and about 4 miles northwest of the new Meyers Caddo lime discovery. It was completed for 61 bbl. of oil and 9 bbl. of water in 3 hours or at the estimated steady rate of about 100 bbl. daily. Final gage was through ¾-in. choke, pay being found from 3,791-3,805 ft., after plugging back from a total depth of 5,386 ft.

Young County May Have Second Mississippian Lime Pool

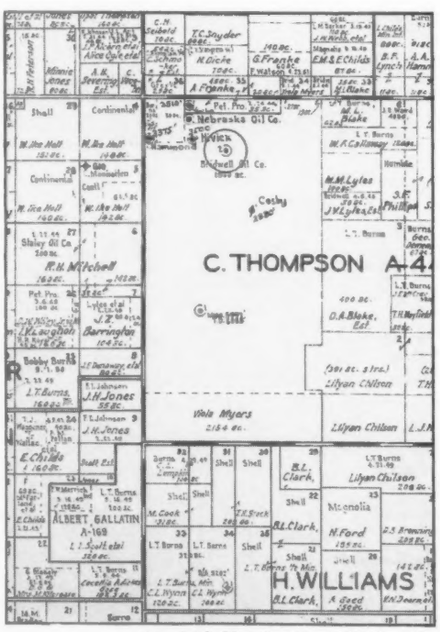
The second Mississippian lime oil discovery in Young County in as many months was indicated the past week when a wildcat in the northeastern part encountered saturation in the deep section. It is T. D. Humphrey 1 E. G. Williamson, Block 601, T.E.&L. Survey, 3 miles southwest of Jean. The test found the upper Caddo lime at 3,975 ft., the Marble Falls of basal Pennsylvanian was cut out altogether, and the Mississippian was found from 4,980 to 5,165 ft. In drilling deeper the Ellenburger was topped at 5,165 ft. and drilled to a total depth of 5,246 ft. A 30-minute drill-stem test of the Mississippian section recovered 60 ft. of live oil with bottom-hole pressure gaging 2,000 lb. The 5½-in. casing was set through the possible pay section and it will be perforated for completion attempts the coming week.

Recent Ellenburger Lime Discoveries Officially Gaged

A completion flow of 27 bbl. of oil in 4 hours was recorded for Magnolia 65 Waggoner, Section 15, Block 13, H.&T.C. Survey, new Ellenburger lime discovery in the old, shallow Electra field of Wilbarger County. The flow was through ¾-in. choke, perforations being opposite saturation in the Ellenburger lime from 2,992-96 ft.

BINDELL.—Flow of 600 bbl. daily was recorded for the Texas Co. 1 Joe Fleitman, William Simpson Survey, Abstract 966, Ellenburger lime discovery in the Bindell field of Cooke County. The area is about 5 miles northwest of Muenster and the test is bottomed at 3,245 ft. in the Ellenburger lime.

WORSHAM.—A completion gage of 176 bbl. of oil and 153 bbl. of water daily was reported for the Gulf 1 Scaling, Section 3, T.&N.O. Survey, recent Ellenburger lime discovery in the old 3,900-ft. producing Worsham field of Clay County and just north of Bellevue. The gage was pumping and from a total depth of 5,814 ft.



Heydrick Mapping Co., Wichita Falls

Opening a new Caddo lime field in Clay County, Bridwell Oil 2 Meyers has tanked 100 bbl. of oil in 3 hours and is now shut in for erection of storage. It is about 4 miles east of the Strawn sand Browning field opened 2 years ago. Two tests to the south of the discovery, Bridwell 1 Meyers, and Burns 1 Wynn, are being prepared for reworking in search of the new pay level

NORTH TEXAS COMPLETIONS

WILDCATS

Archer County: McKenna, Inc., 1 Snider, dry at 875 ft. D. L. Wolf 2 Young, dry at 1,560 ft.

Clay County: Burns 1 Southernland, NE cor. of 100 acres of Sec. 63, J. H. Belcher Sur., 61 bbl. of oil, 9 bbl. of water in 3 hr., ¾-in. choke, est. 100 bbl. daily, 3,791-3,805 ft., T.D. 5,386 ft. *Extends Browning field.*

Throckmorton County: A. L. Wasson 1 Erwin, dry at 895 ft.

Wilbarger County: J. B. H. Henderson 1 Waggoner, dry at 2,102 ft.

Young County: Ben H. Rankin 1 Bell Logan, Sec. 2, J. W. Duty Sur., Abst. 1831, 8 bbl. in 24 hr., pumping, 200,000 cu. ft. gas, 80-qt. shot 4,488-4,502 ft., T.D. 4,507 ft.

FIELDS

Electra, Wilbarger County: Summit Oil 5 Waggoner, 22 bbl. in 24 hr., pumping, 1,686-97 ft., T.D. 1,700 ft.

Hott, Montague County: Seitz, Comegys, Ltd., 8 Reach B, 165 bbl. in 24 hr., pumping natural, 2,121-43 ft.

Hull-Silk, Archer County: Barnes & Traugh 5 Ray Carson B, 73 bbl. in 3 hr., flowing through ¾-in. choke on 2-in. tubing, est. 375 bbl. daily, 4,335-63 ft.

R. P. Dorian 3 Wilson, 48 bbl. in 2 hr., ½-in. choke, est. 225 bbl. daily, 3,780-3,805 ft.

K.M.A., Wichita County: Retsal Drilling Co. 2 Martin, 78 bbl. in 3 hr., ½-in. choke, est. 175 bbl. daily, 150-qt. shot 3,710-40 ft., 280-qt. shot 3,800-50 ft., T.D. 3,850 ft.

Buffalo Oil 17 Ferguson, 126 bbl. in 3 hr., ¼-in. choke, est. 325 bbl. daily, 280-qt. shot 3,730-3,825 ft., T.D. 3,842 ft.

H. D. Egger 6 Preston, 60 bbl. in 3 hr., ¾-in. choke, est. 150 bbl. daily, 180-qt. shot, top K.M.A. lime 3,824 ft., top Ellenburger 4,482 ft., 4,489-4,507 ft.

Voth, Cooke County: High Point Oil 1 Bertram, temporarily abandoned, T.D. 1,129 ft., P.B. from 1,120 ft.

Kingery Bros. Drilling Co. 4 Trubenbach, 69 bbl. in 24 hr., 30-qt. shot, est. 95 bbl. daily oil show 1,312-22 ft., 1,345-69 ft., 1,611-16 ft., T.D. 1,624 ft.

Trumter Pet. Corp. 1 Trubenbach, dry at 1,854 ft.

Trumter Pet. Corp. 2 Trubenbach, abandoned location.

Trumter Pet. Corp. 3 Trubenbach, abandoned location.

Humble 13 Hellman, 25 bbl. in 8 hr., pumping natural, est. 60 bbl. daily, oil shows 1,296-99 ft., 1,305-07½ ft., 1,312-13 ft., T.D. 1,319 ft.

Humble 14 Hellman, 30 bbl. in 8 hr., est. 65 bbl. daily, oil shows 1,231-34 ft., 1,240-60 ft.

Whitfield, Pearson & Grimes 13 Sicking, 25 bbl. in 8 hr., pumping natural, est. 60 bbl. daily, oil shows 1,253-58 ft., 1,270-95 ft.

Walnut Bend, Cooke County: Sinclair Prairie 4 Cox B, 80 bbl. in 11 hr., pumping natural, est. 125 bbl. daily, 4,676-89 ft., T.D. 4,926 ft.

MISCELLANEOUS POOLS

Archer County: Staley Oil 1 Wilson, abandoned location.

B. G. & H. Oil 8 Richardson, 6 bbl. in 24 hr., pumping, 1,442-46 ft.

Bridwell Oil 2 Bridwell D, dry at 918 ft.

Baylor County: British American Oil 1 Cowan C, dry at 5,522 ft.

Clay County: Akin, Dimock & Costley 3-A C. T. Taylor E, dry at 270 ft.

E. N. Costley 3 C. T. Taylor B, abandoned location.

Perkins & Cullum 5 C. T. Taylor A, dry at 1,330 ft.

George G. Golden 4 Enyart, dry at 350 ft.

Stayton Oil 5 McGregor, 55 bbl. in 24 hr., pumping natural, 1,150-63 ft.

George W. Graham 5 Hansard, dry at 1,360 ft.

Stayton Oil 6 McGregor, 63 bbl. in 24 hr., pumping natural, 1,151-67 ft.

Cooke County: Metzner & McKee 6 Henschid, 18 bbl. in 24 hr., pumping after 10-qt. shot, 791-801 ft.

Thomas E. Nix 1 Flusche, 39 bbl. in 24 hr., pumping natural, 775-85 ft., T.D. 790 ft.

Jack County: C. D. Bird 6 Jackson, abandoned location.

Harper & Knappenberger 1 Shoun, 251 bbl. in 5 hr., est. 600 bbl. daily, 3,045-66 ft.

Claymont Oil 9 Bouldin, 10 bbl. in 24 hr., 20-qt. shot 798-821 ft.

Throckmorton County: Burk Royalty Co. 4 Housley, 5 bbl. in 24 hr., pumping, 675-701 ft.

Wichita County: Akin, Dimock & Costley 3 Oates B, 55 bbl. in 24 hr., pumping, 1,318-25 ft., T.D. 1,327 ft., P.B. from 1,325 ft.

Akin, Dimock & Costley 4 Oates B, 45 bbl. in 24 hr., pumping, top sand 1,288 ft., 1,288-98 ft.

Akin, Dimock & Costley 1 Horton, dry at 1,603 ft.

W. A. Krohn 12 Jennings, abandoned location.

Wilbarger County: W. B. Omohundro 6 Waggoner, abandoned location.

Young County: Bohner & Watson 15 Prideaux, dry at 594 ft.

W. T. Stafford 1 Nicholson, dry at 967 ft.

L. T. Burns 6 Larimore, 50 bbl. in 24 hr., pumping natural, 865-75 ft.

L. T. Burns 2 Leberman, 59 bbl. in 24 hr., pumping natural, 879-89 ft.

L. T. Burns 3 Leberman, dry at 952 ft.

Carey & Carey 5 Vaughn, 57 bbl. in 3 hr., ¼-in. choke, est. 300 bbl. daily, 2,480-92 ft., T.D. 2,512 ft.

Stanley A. Thompson 2 Vaughn A, 300 bbl. in 12 hr. 45 min., ½-in. choke, 6,000 gal. acid, 40-qt. shot, est. 450 bbl. daily, top Caddo lime 3,910 ft., Marble Falls 4,295 ft., pay 4,295-4,335 ft.

Henry Zweifel 4 Sewell A, 562 bbl. in 24 hr., ½-in. choke, perf. casing 70 shots 4,196-4,210 ft., top Caddo lime 3,821 ft., Marble Falls 4,180 ft., pay 4,192-4,226 ft., T.D. 4,275 ft.

(Continued on Page 100)

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Apache and Velma Strikes Set Off Play Over Southwest

By ROBERT INGRAM

SOUTHWESTERN Oklahoma last week had all the makings of a big oil play. That the general area pivoting on the big Cement field in Caddo County had unusually favorable possibilities was nothing new. But ever since Frank Reeves worked out the surface structure of the Cement field for the U. S. Geological Survey in 1916, development has been held up by one unfavorable condition or another. Chief among the factors holding up a widespread campaign have been (1) lack of information on complex subsurface conditions and (2) lack of outlets.

Last week it looked as though neither of these deficiencies could hold up the play any longer. Regardless of puzzling local conditions on structures in the area, the discovery of production from the Simpson Bromide at the Velma pool in Stephens County and at a rank wildcat near Apache in Caddo County had pretty well established that Simpson formations were distributed with fair regularity over the entire region extending from Oklahoma City. It was also likely that on favorable structures it would be productive. And while geologists would not admit that the Simpson pay at Velma and at Apache was the same as the Wilcox at Oklahoma City, many were quick to use the name "Wilcox."

SUMMARY OF COMPLETIONS

	No.	Bbl.	Footage
Oil wells: Dill	2	285	7,372
Fish	1	280	1,513
West Hewitt	4	2,100	8,570
St. Louis	2	1,039	7,109
East Stroud	1	528	2,874
Tecumseh Lake	1	577	5,227
Other fields	12	374	26,097
Wildcats	1	215	7,650
Gas wells: Wildcats	1	*1.5	2,208
Dry holes: Fish	1	.....	1,512
West Hewitt	1	.....	955
Other fields	7	.....	14,143
Wildcats	7	.....	25,767
Total	41	.....	110,997

*Million cu. ft.

The area affected by the two wells—Skelly 4 Robberson-Frensley at Velma and Texas 2 Smith at Apache—was so great in extent that the local plays were more or less overshadowed. Since much of the area had already been developed in shallow zones, local highs have been proven all along the trend of the folding from Carter County on the southeast to the Gotebo field in Kiowa County on the northwest, and leasing was under way throughout. Practically established from surface geology was the theory that the entire area is dominated by a series of trends running in a northwest-southeast direction and wildcatters seemed to have an open field for prospecting.

At Velma, Skelly Oil Co. was still completing the 4 Robberson in the zone from 7,120-7,215 ft. where the show of oil several weeks ago proved the deep pay. After the pipe was perforated at intervals in this zone, the well flowed 350 bbl. in 21 hours through tubing. No spectacular development was expected at Velma since deep zones had already been communitized and trading was slow.

At Apache, however, where the Texas Co. had killed the wild gas from the Hunton zone and was trying to complete the 2 Smith in the Simpson at 3,883-3,410 ft., plans were already being announced for new tests. First offset was the Sinclair Prairie 1 Arthur Lewis, NE SW 2-5-12w, south of the discovery well. First outpost was Olson Drilling Co. and Phillips Petroleum Co. 1 Ka-Way-Kla, SE NE NW 28-6-11w, about 6 miles northeast. And about 8 miles northwest Ray Stephens, Inc., was reblocking the "Apache" or "Pharris" block for another deep test while at the same time announcing location for a wildcat just east of the Cement field—the 1-A Johnston, NW NE NW 18-5-8w. Meantime, such southwest towns as Chickasha and Anadarko were already reporting the influx of oil men.

Next big announcement expected by those watching the area was that provision would be made to move production from the southwest into the big midwestern market.

Two Promising Wilcox Tests Get Salt Water; Third Shows

Two wildcats which had been expected to open new pools failed to make producers last week. One was the Continental Oil Co. 1 Leninger, SW SE SW 17-15-3w, southwest of Seward in Logan County. The well was drilled and cored to 6,422 ft. in the second Wilcox sand to get salt water. However, operators were plugging back to set casing and test the first sand which was topped at 6,219 ft. and cored several times to show saturation.

The other disappointment was in Pottawatomie County, east of Tecumseh, where C. W. Sharp 1 Billington, NW SE SE 21-9-4, also recovered salt water from the Wilcox sand. Here also operators had cored saturation in the section from 4,636-40 ft. At week's end they were to plug back for a test of the Viola lime.

In spite of the failure of these two wells, which had looked unusually promising, and the usual crop of wildcat failures, exploratory drilling continued apace in all sections of the state and Anderson-Prichard Oil Corp. of Oklahoma City and Berry Brothers of Tulsa were believed to have opened a new pool west of the Ramsey pool of Payne County. In SE NW 20-18-1, the 1 McGuire cored 5½ ft. of saturated Wilcox sand from 5,225-34 ft., and it was believed that the upper part of the core which was lost was very porous and saturated.

Guthrie Pool Believed to Be Running Due East and West

Performance of wells in the new Guthrie pool in Logan County indicated last week that the trend of the field was due east and west—the first in the state. To the south, the pool was cut off by two dry holes, the North American 1 Belle Hirzel, NE NW SE 17-17-1w, and Big Chief 1 Trim, NE NE SE 13-17-1w. No test had been drilled north of present production, but the four wells so far completed in the pool ran due west from the discovery and the fifth producer, expected this week, was along the same trend. It was Sunray 2 Donoghue, NW NW SE 7-17-1w, an offset to the discovery. This well topped the first Wilcox sand at 5,368 ft. and was nearing the second Wilcox at 5,427 ft.

On the extreme west side, the W. C. McBride 3 Eastwood, NW NW SW 7-17-1w, was drilling below 5,250 ft. after showing 100 ft. of oil on a drill-stem test from the Bartlesville sand at 5,104-16 ft. A half mile east of production, Thomas N. Berry 1 Howland, SW SW NW 8-17-1w, had the Mississippi at 5,065 ft. and the Woodford at 5,084 ft., checking only 21 ft. lower than the discovery and 3 ft. higher than the Sinclair Prairie 1 Sult, a producer. There were 12 other rigs running in the field—all of them located along the due east-west trend.

WILDCAT COMPLETIONS

Gus Delaney 1 Montgomery ..... SE NW NE 13-7-2w
Flowed 215 bbl. through ⅝-in. choke, T.D. 7,650 ft., Wilcox 7,640 ft., 7-in. 7,635 ft., *revives Noble pool*, Cleveland County.

Eagle 1 Mann ..... SW NE NE 31-7-7
1,500,000 cu. ft. gas, 900 lb. R.P., Senora zone topped at 1,970 ft., 7-in. 2,008 ft., T.D. 2,208 ft., *new gas field*, Seminole County.

Kirksey 1 Baskett ..... SW SE SE 7-3s-10e
Dry, T.D. 955 ft., in sandy lime, 4-in. drill pipe 830 ft., T.D. 906 ft., Atoka County.

Gulf 1 Nesmith ..... S½ NW NW 11-7s-7w
Dry, T.D. 4,715 ft., top Cisco 1,510 ft., Hoxbar 2,190 ft., Deese 4,280 ft., Arkose 4,497 ft., Arbuckle 4,563 ft., Jefferson County.

Mid-Continent 1 Felix ..... SE SW SW 11-9-9
Dry, T.D. 4,247 ft., Wilcox 4,137 ft., Hughes County.

Burke-Greis 1 Hodges ..... N½ NW SW 30-11-10
Dry, T.D. 3,758 ft., Hunton 3,735 ft., Cromwell 3,183 ft., Okfuskee County.

Starr 1 Clouse ..... NE SE NE 7-6-13w
Dry, T.D. 1,245 ft., Simpson 1,125 ft., sand 1,150 ft., H.F.W. 1,191 ft., Caddo County.

Big Chief 1 Trimm ..... NE SE 13-17-2w
Dry, T.D. 5,577 ft., first Wilcox 5,493 ft., second Wilcox 5,565 ft., Logan County.

Aladdin 1 Francis ..... SW NW 4-19-1w
Dry, T.D. 5,270½ ft., first Wilcox 5,259 ft., Payne County.

FIELD COMPLETIONS

Cleveland, Pawnee County: Adamson 6 Parker, N½ SW SE 24-21-7, dry, T.D. 1,176 ft., Peoples sand 1,167-76 ft.

Cumberland, Marshall County: Pure 1 Little 209, SW SE SW 27-5s-7e, flowed 112 bbl. in 4 hr., pay 4,907-5,081 ft., T.D.

Dill, Okfuskee County: Devonian 4 Phillips-A, NE NW SW 26-12-8, flowed 265 bbl., Cromwell 3,674 ft., 5-in. 3,673 ft., T.D. 3,693 ft., shot 3,682-90 ft.

McMahon 1 Community, NE SE SE 27-12-8, pumped 20 bbl., Cromwell zone 3,655 ft., 5-in. 3,668 ft., T.D. 3,679 ft., water, P.B. 3,669 ft., drilled out to 3,675 ft.

Fish, Seminole County: Daube 1 Ferguson, NE NW SW 19-7-8, dry, T.D. 1,512 ft., lower Calvin 1,488 ft., 8-in. 1,493 ft.

Mid-Continent 2 Barnhart, NE SE NW 19-7-8, pumped 280 bbl., lower Wewoka 1,477 ft., 5-in. 1,478 ft., T.D. 1,513 ft., shot 1,495-1,512 ft.

Glenn Pool, Creek County: Geiger 27 Bigpond, C SW 21-18-12, 8 bbl., Glen 1,326-1,458 ft., and Taneha 1,588-1,600 ft., T.D. 1,600 ft.

Healdton, Carter County: Ideal 17 Scroggins, E½ SE SE 32-3s-3w, 12 bbl., pay 1,105-45 ft., T.D. 1,154 ft.

West Hewitt, Carter County: Kyle 4 Dougherty, NE SW SW 17-4s-2w, flowed 9 bbl. an hr. through tubing, pay 2,211-65 ft., 7-in. 2,211 ft., T.D. 2,265 ft.

Tucker 4 Shores, SW SW 17-4s-2w, flowed 910 bbl., sand 2056-97 ft., 7-in. 2,050 ft., sand 2,097-2,114 ft., T.D.

Samedan 1 Ward, NE NE SE 19-4s-2w, dry, T.D. 955 ft.

Cox 2 Stone, SE SW NW 20-4s-2w, 900 bbl., sand 1,910-2,074 ft., T.D. 2,074 ft.

Gibson 3 Harrell, NW SE NW 20-4s-2w, pumped 116 bbl., lime 2,175-81 ft., 7-in. 2,181 ft., perf. 1,992-2,160 ft., T.D. 2,181 ft.

South Hickory Creek, Osage County: Blackwell 13 Osage, SW NW 10-28-11, 40 bbl., Wayside 942 ft., T.D. 986 ft.

Hobart, Kiowa County: Lewis 2 Wooten, SW SE SE 28-7-17w, pumped 6 bbl. an hr., 2½ per cent b.s. and 1½ per cent water, lime 880-909 ft., show gas 900-903 ft., 5-in. 909 ft., Arbuckle 895 ft., free oil 1,030-34 ft., T.D. 1,037 ft.

South Hominy, Osage County: Paul McIntyre 4 Osage, NE NE SW 31-22-9, 20 bbl., lower Layton 1,426-38 ft., T.D. 1,455 ft.

Keokuk, Seminole County: McCrabb 1 Smith, SW SW SW 36-11-6, dry, T.D. 2,710 ft., Calvin 2,700 ft., cored salty sand 2,705-10 ft.

Lawton, Comanche County: Wichita 11 School Land, NE SE SE 20-2-10w, dry, T.D. 900 ft.

East Little River: Atlantic 1 Johnson, NW NW SW 29-8-7, dry, T.D. 4,333 ft.

Marietta, Love County: Calvin 2 Westheimer & Daube, W½ SE SW 27-6s-2e, dry, T.D. 3,022 ft., Viola 2,680 ft., 5-in. 2,683 ft., acid., pumped 4 to 5 bbl. a day.

North McCracken, Wagoner County: Campbell 1 Guinn, NW NW NE 16-18-17, dry, T.D. 410 ft.

Oakman, Pontotoc County: Scroggins 1 Norman, SE NE NE 34-5-7, pumped 4 bbl. in 24 hr., sand 1,235-45 ft., 7-in. 1,232 ft., T.D. 1,255 ft., shot 1,235-42 ft.

North Okemah, Okfuskee County: Keener 1 Claunch, SW NE SE 36-12-9, flowed 90 bbl., Cromwell 3,281 ft., T.D. 3,874 ft., 5-in. 3,262 ft., P.B. 3,115 ft., shot 3,054-3,106 ft.

Red Fork, Tulsa County: Howard 11 Targee, S½ SW SW 14-19-12, 1 bbl., Perryman 1,203-27 ft., T.D. 1,231 ft.

Sapulpa, Creek County: Reynolds 2 Gash, NE SE SW 33-18-11, dry, T.D. 1,592 ft.

South Sapulpa, Creek County: Jackson 1-A Dannenburg, SW SW NE 29-17-11, 10 bbl., Redfork 1,789-1,826 ft., T.D. 1,836 ft.

Seminole, Seminole County: Stanolind 2 Grisso-B, SW NE SW 15-9-6, swabbed 31 bbl., Senora sand zone 2,877 ft., sand 2,886., 5-in. 2,885 ft., T.D. 2,930 ft., shot 2,906-22 ft., acid.

St. Louis, Pottawatomie County: Sinclair 5 Reagan, NW SE NE 17-7-4, swabbed 792 bbl., sand 4,208-10 ft., dolomite 4,143 ft., 7-in. 4,191 ft., T.D. 4,210 ft.

Meyers 2 Triplett, NW NE SE 33-8-4, flowed 247 bbl., Hunton 3,859 ft., 7-in. 3,859 ft., T.D. 3,899 ft., acid.

East Stroud, Creek County: Lewis 3 Jones, NW SE SW 32-15-7, flowed 528 bbl., Prue 2,833-73 ft., 7-in. 2,832 ft., T.D. 2,874 ft., shot 2,840-74 ft.

Tecumseh Lake, Pottawatomie County: Hall-Jordan 1 Pensoneau, SE SW SW 36-10-3, flowed 577 bbl. through ⅝-in. choke, Wilcox 5,212 ft., T.D. 5,227 ft.

North Tibbens: Spring 1 Conedige, NW SE SW 20-15-9, swabbed 40 bbl., Viola 3,596 ft., 5-in. 3,610 ft., T.D. 3,658 ft., shot 3,644-58 ft.

WILDCAT DRILLING REPORT

North and Central

Cleveland County: Delaney 1 Bandy, NW SE SW 13-7-2w, first report.

Creek County: Beal & LeVieux 1 Murray, SE SE SW 12-16-7, T.D. 451 ft., set 15½-in., drilling ahead.

Williams 7 Steinman, NE NW NW 17-16-10, Wheeler 1,175-1,200 ft., 8-in. 1,230 ft., drilling 1,250 ft.

Zephyr 1 Sinclair, SE SE NW 34-17-8, Hogshooter 1,295 ft., Layton 1,353 ft., Oswego 2,205-2,307 ft., Prue 2,325-90 ft., Redfork 2,693-2,732 ft., Inola 2,820 ft., Bartlesville 2,843 ft., Dutcher 3,100 ft., Mississippi 3,310 ft., T.D. 3,692 ft.

Garfield County: Gulf 1 Schroeder, N½ NE NW 8-23-4w, Pawhuska 2,600 ft., Lecompton 2,940 ft., Oread 3,300 ft., drilling 4,270 ft.

Hughes County: Breen 1-A Cahill, E½ NE SW 2-6-8, first report.

Le Flore County: Western Oklahoma 1 Ward, NW SW NW 27-9-24, base Wapanucka 5,558 ft., cored shale with sand spots 5,650-67 ft., T.D. 5,700 ft., fishing.

Lincoln County: Vanderpool 1 Menshall, SE SE SW 11-16-3, drilling 400 ft.

(Continued on Page 94)

Pools in Western Kansas Being Joined By Outposts

By ROBERT INGRAM

DRILLING in western Kansas last week was fast proving what many geologists and engineers have long contended it would prove—that oil reserves along the Barton arch were not trapped in small pools but were actually in fields extending over unusually large areas. For the past several weeks, outpost wells have been pulling pool limits in several areas closer and closer together and in many cases were swallowing locations where dry holes had previously been said to limit production.

Typical of the trend was the Greenvale pool in Russell County where production has been proved in recent weeks by outposts in all directions. Opened April 6, 1938, by Jones et al 1 Kuhnle, SE NW 4-15-12w, there were six wells in the pool at the first of the year producing a total of from 10,000 to 11,000 bbl. a month. By last week there were 14 wells in the original area of the pool and important extensions to the east, south, west and north. Most recent of these extensions were completed the previous week—Shell 1 Vejl, NE NE NW 5-15-12w, ¾ mile west; and Phil-Han 1 Sokup, NW NW SW 3-15-12w, 1½ miles southwest. The 1 Vejl was completed for a potential of 226 bbl. a day, and the 1 Sokup was testing after filling an estimated 200 bbl. an hour.

These extensions were pushing limits of the Greenvale pool close to the Northwest Greenvale and North Greenvale pools on the north and the Hall Gurney pool on the west. At the same time the big Hall-Gurney pool was spreading toward the Greenvale area as a result of the completion of Shell 1 Ruby, NW NE 36-14-13w, for 2,946 bbl. potential from the Kansas City lime at a total depth of 2,897 ft. Thus there appeared a strong probability that eventually all these areas would be joined in spite of spotted dry holes throughout.

Such were the results of drilling throughout the pools along the Barton arch centering around such large areas as Hall-Gurney, Bemis-Shutts, Stoltenberg-Wilkins-Bloomer, Silica-Chase and Trapp-Coralena-Anschutz. Last week the Chase pool seemed assured of a ¼-mile extension by C. H. Weaver 1 Robbins, S½ SW NE 19-19-9w, which topped the Arbuckle dolomite at 3,277 ft., drilled in 1 ft. with saturation in cuttings and set casing to test.

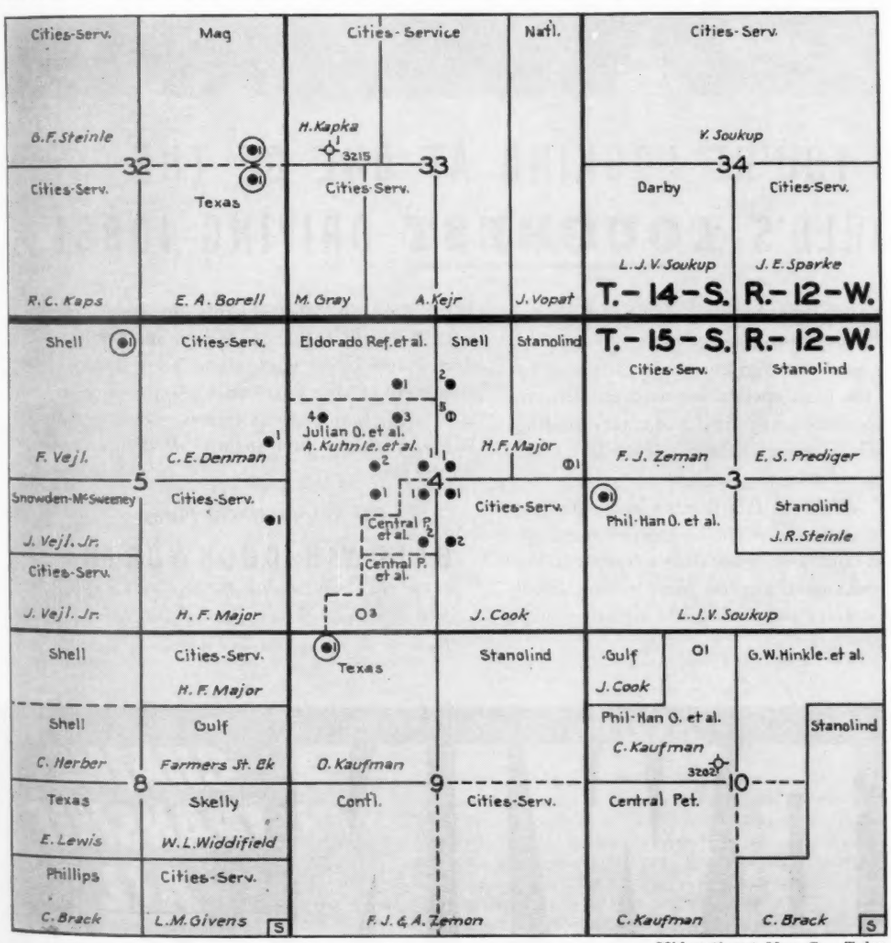
Successful completion of this well would mark the second extension in the same township this month. The first was the Weaver 1 Link, N½ NE SW 18-19-9w, a ⅜-mile east extension to the old Doran pool which was given a potential of 1,394 bbl. from the Arbuckle at a total depth of 3,271 ft.

Meantime, the first commercial offset producer to the discovery well of the Donovan pool in Russell County, near the Big Creek pools, was assured by Wolf Creek Oil Co. 2 Donovan, N½ SW SE 10-15-15w, which had set 5-in. casing at 3,234 ft. after topping the Lansing-Kansas City lime series at 3,018 ft., 11 ft. higher than the 6-year-old discovery well.

And 1½ miles southwest of the Hall-Gurney pool, Westgate-Greenland 1 Rusch, E½ SE NE 29-14-14w, drew an initial potential of 3,000 bbl. a day from a total depth of 3,222 ft. in the Arbuckle dolomite to prove either a new pool or another Hall-Gurney extension of importance.

New Pool Shows in Stafford County, New Pay at Voshell

Northern Stafford County had possibilities for new production 2½ miles south of the Drach pool last week. Stanolind Oil & Gas Co. 1 Ahnert, S½ SE NE 26-22-13w, cored 8 in. of fair porosity and saturation from 3,748-52 ft. in the Arbuckle dolomite topped at 3,745 ft. Casing was being run for a production test.



Midcontinent Map Co., Tulsa

Extensions of the Greenvale pool, Russell County, have been made in all directions in the last few months. The new outpost producers are circled above, showing how limits of the pool have been widened and also how the dry hole to the north did not condemn that part of the pool

SUMMARY OF COMPLETIONS

Kansas

	No.	Bbl.	Footage
Oil wells: Fields	32	35,555	111,117
Gas wells: Wildcats	1	*2.2	2,555
Dry holes: Wildcats	5	.....	16,203
Total	38	.....	129,875

*Million cu. ft.

Nebraska

	No.	Bbl.	Footage
Dry holes: Wildcats	1	.....	2,661

In the Voshell pool, McPherson County, Shell Oil Co. 6 Koehn, W½ NW NE 16-21-3w, swabbed 20½ bbl. of oil and no water in 5 hours from the Simpson sand at a total depth of 3,393 ft., a new horizon for the pool. Most of the production has been from the Viola lime. Operators are installing pumping equipment in the new well for a test.

AVERAGE DAILY PRODUCTION

LEADING KANSAS FIELDS

	June 14
Augusta	1,200
Bemis-Shutts	9,550
Bloomer	6,050
Burnett	4,850
Burrton	8,400
Chase	5,450
Elbing	1,100
El Dorado-Towanda	7,200
Geneseo	6,950
Graber	2,600
Greenwood County	9,300
Hollow-Nikkel	1,450
Keesling	1,050
Lerado	800
Lorraine	750
Oxford	600
Rainbow Bend	750
Raymond	1,250
Ritz-Canton	4,100
Trapp	20,150
Balance Russell County	23,800
Sedgwick County	3,050
Voshell	1,850
Silica	17,750
Wellington	1,250
Wherry	2,150
Zenith	8,600
Others	66,050
Total Kansas	218,550

FIELD COMPLETIONS

Ainsworth, Barton County: Continental 1 Haflin, SE SW NW 28-16-13w, 376 bbl., Arbuckle 3,406 ft., T.D.

Burnett, Ellis County: Darby 7 Peavey, C SE SW NE 13-11-18w, 3,000 bbl., Arbuckle, T.D. 3,425 ft., acid.

Nadel & Gussman 4 Carmichael, SW NE NE 19-11-11w, 3,000 bbl., Arbuckle, T.D. 3,442 ft., acid.

Coralena, Russell County: Continental 8 Meharg, SE NE NE 17-15-13w, 425 bbl., Kansas City, T.D. 3,126 ft.

Carter 14 Detrich, SE SE SW 8-15-13w, 64 bbl., Kansas City, T.D. 3,947 ft.

Coralena Oil 3-A Sellens, NE NE NW 17-15-13w, 66 bbl., Kansas City, T.D. 2,951 ft.

Cunningham, Pratt County: Sinclair 2-B Greider, CEL NE NE 35-27-11w, 479 bbl., Kansas City, T.D. 4,091 ft.

Skelly 6-A Krehbiel, CSL SE SE 24-27-11w, 445 bbl., Kansas City, T.D. 3,510 ft.

Drach, Stafford County, Stanolind 4 Schartz, CWL NE 13-22-13w, 101 bbl., Arbuckle, T.D. 3,705 ft.

Frog Hollow, Cowley County: Leader 1 Scott, NE NE NE 20-32-5, 57 bbl., Bartlesville, T.D. 3,053 ft.

Hall Gurney, Ellis County: Westgate-Greenland 1 Rusch, C E½ SE NE 29-14-14w, 3,000 bbl., Arbuckle, T.D. 3,222 ft.

Keighly, Butler County: Phillips 25 Keighly, SW SW NW 23-27-7, 297 bbl., dolomite, T.D. 3,158 ft.

Laton, Rooks: Vickers 2-B Tatkenhorst, CEL SE SE 10-9-16w, 325 bbl., Kansas City, T.D. 3,270 ft.

S. J. Krueger 4-B Tatkenhorst, CSL SW SE 10-9-16w, 47 bbl., Kansas City, T.D. 3,275 ft.

Vickers Pet. 2-B Tatkenhorst, CEL SE SE 10-9-16w, 45 bbl., Kansas City, T.D. 3,226 ft.

Raymond, Rice County: Holl & Branine 1 Thompson,

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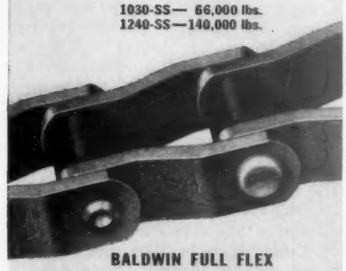

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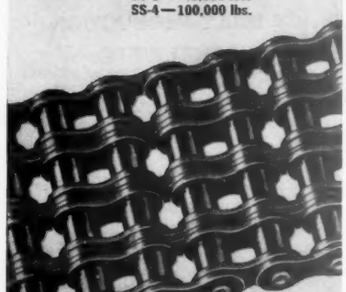

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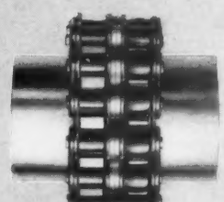

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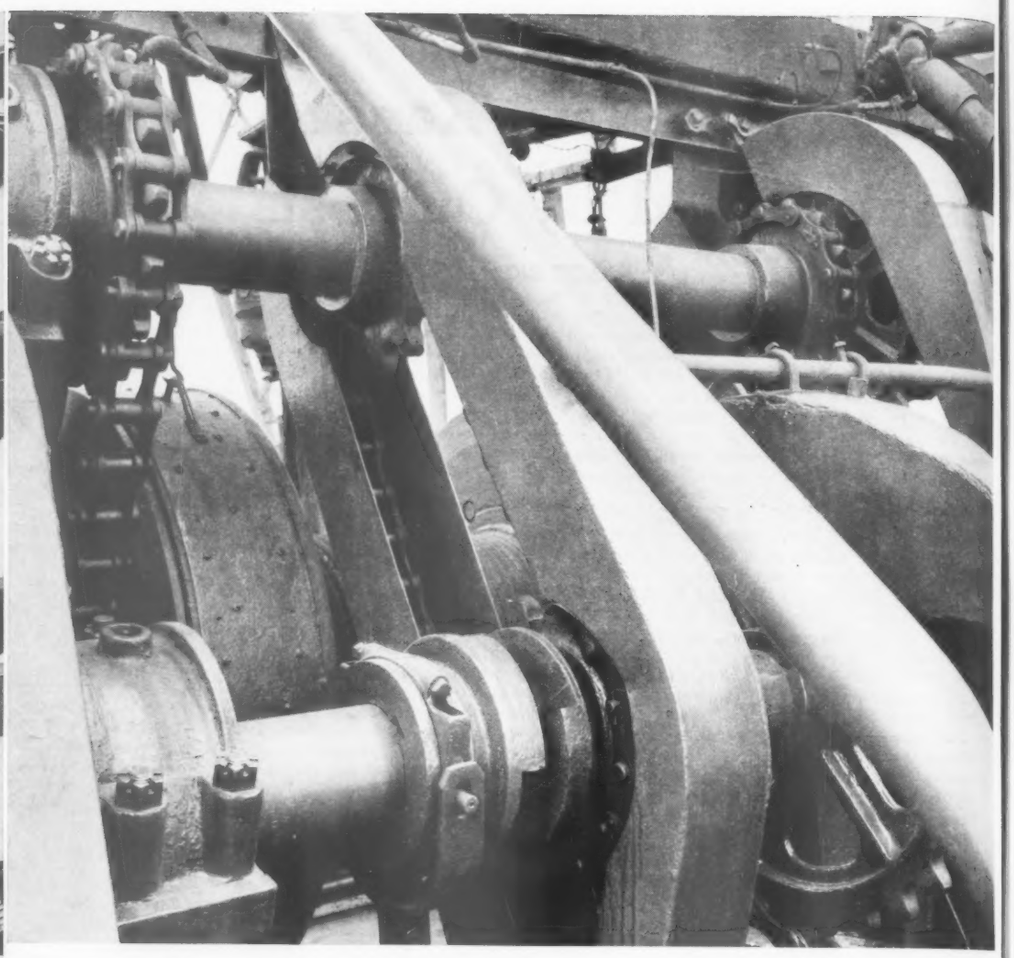

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SW SW SW 17-20-11w, 61 bbl., Kansas City, T.D 3,116 ft.

Roxbury, McPherson County: Stelbar 2 Zeitlow, CWL NE SW 19-17-1w, 1,264 bbl., chat, T.D. 2,707 ft.

St. John, Stafford County: Stanolind 2 Tudor, CSL SW NW 23-24-13w, 3,000 bbl., Arbuckle, T.D. 4,110 ft.

Stafford, Stafford County: Stanolind 4 Crawford, CEL NE NE 15-24-12w, 3,000 bbl., Viola, T.D. 3,826 ft., acid.

Sperling, Harvey County: Selby 2 Sperling, NE SE SE 14-22-2w, 49 bbl., Hunton, T.D. 3,282 ft.

Schaffer, Stafford County: Bodine Drlg. 2 Wilcutt, CWL NE SE 14-21-13w, 3,000 bbl., Kansas City, T.D. 3,411 ft.

Trapp, Russell County: Derby 1 Berry, SW SW NE 33-15-13w, 3,000 bbl., Arbuckle, T.D. 3,347 ft.

Shell 7 Sellens, C SW SE SW 33-15-13w, 2,140 bbl., Arbuckle, T.D. 3,357 ft., acid.

Shell 4-C Bitter, SE SE SW 5-16-13w, 49 bbl., Arbuckle, T.D. 3,360 ft.

Voshell, McPherson County: Shell 6 Koehn, CWL NW NE 16-21-3w, 66 bbl., Simpson, T.D. 3,393 ft.

Whelan, Barber County: Olson 1-B Swartz, C NW NE 31-31-11w, 842 bbl., chat, T.D. 4,294 ft.

Wilkins, Ellsworth County: Mudge 2 Schroeder, CEL NE 30-17-9w, 71 bbl., Arbuckle, T.D. 3,239 ft.

Zenith, Stafford County: Phillips 6 Tretbar, CNL SW NE 12-24-11w, 97 bbl., Viola, T.D. 3,752 ft.

Landon 2 Volker, CSL SE SW 1-24-11w, 928 bbl., Misener, T.D. 3,740 ft.

Stanolind 3 Kirkpatrick, CWL NE NW 15-24-11w, 3,000 bbl., Viola, T.D. 3,827 ft.

Transwestern 2 McNickle, CSL SW NW 1-24-11w, 261 bbl., Viola, T.D. 3,740 ft.

Stanolind 7 Hayes, CSL SE SE 11-24-11w, 3,000 bbl., Misener, T.D. 3,809 ft.

WILDCATS COMPLETED

Ellsworth County: Ingling & Parker 1-A State, SW SW 29-15-8w, 2,176,000 cu. ft. gas, R.P. 872 lb., Topeka 2,194 ft., T.D. 2,555 ft., perf. 2,475-94 ft., acid, *new gas area.*

Rooks County: Bartlett-Vernon 1 Liebenau, S½ SW SW 32-6-19w, dry, T.D. 3,566 ft., anhydrite 1,580 ft., Lansing 3,302 ft., Arbuckle 3,537 ft.

Russell County: Central 1 Waydziak, NW NW NW 25-15-12w, dry, T.D. 3,361 ft., Lansing 3,031 ft., Arbuckle 3,341 ft., some show oil 3,341-50 ft.

Pawnee County: Gulf 1 Seymore, N½ SW NW 34-21-18w, dry, T.D. 4,133 ft., anhydrite 1,130 ft., Simpson sand 4,084 ft., Arbuckle 4,108 ft.

Stafford County: W. W. Drilling 1 Wilson, W½ NW NW 5-25-14w, dry, T.D. 3,843 ft., Arbuckle 3,842 ft., lost hole.

Greenwood County: Barker 1-A Dove, SE SW SW 12-28-11e, dry, T.D. 1,300 ft., show oil 1,095-99 ft. in Kansas City, P.B. 1,092 ft., acid, pumped 4 bbl. in 5 days.

WILDCAT DRILLING REPORT

Western Kansas

Barber County: Pryor & Lockhart 1 Ishmael, S½ SE SW 35-34-11w, good stain 4,698-4,709 ft., base Mississippi 4,764-4,815 ft. T.D., 7-in. 4,612 ft.

Barton County: Armer & Vernon 1 Redtzke, S½ SW NW 5-16-11w, Fort Riley 1,625 ft., drilling 1,770 ft.

Isern 1 Laudick, S½ SE NW 28-16-12w, first report.

Branine & Holl 1 Rexroot, E½ NE SE 22-17-13w, 8-in. 2,194 ft., fishing 2,325 ft.

Helmerich & Payne 1 Roth, W½ NW SW 30-19-11w, anhydrite 610 ft., drilling 2,610 ft.

Cowley County: Magnolia 1 Banta, S½ SE NE 26-30-5e, drilling 3,485 ft.

Dickinson County: Jones 1 Kuhn, E½ E½ SE 6-16-4e, drilling 1,875 ft.

Ellis County: Derby 1 Dreiling, W½ SW NW 34-13-17w, 7-in. 1,000 ft., drilling 1,243 ft.

Ellsworth County: Cities Service 2 Padlena, SE NW SE 26-14-10w, Arbuckle 3,229 ft., S.D.

Kearny County: Stanolind 1 Patterson, E½ SE SE 23-22-38w, drilling 1,207 ft.

Marion County: Holl 1 Faulkerson, W½ NW NW 2-20-4e, drilling 1,700 ft.

McPherson County: Westgate-Greenland 1 Rosander, E½ SW SW 33-17-2w, first report.

Phillips County: Wirick 1 Friebus, W½ SW NW 36-2-19w, Fort Hays 315 ft., Topeka 2,925 ft., show oil 3,257-60 ft., slight stain 3,278-82 ft., show oil 3,334-38 ft., cored shale and saturated limestone 3,338-49 ft., cored shale and lime 3,357-74½ ft., show oil 3,409-13 ft., Arbuckle 3,535-39 ft., with no show, coring ahead.

Helmerich & Payne 1 Loyd, E½ SE SE 6-4-17w, Topeka 2,886 ft., Hebner 3,102 ft., Lansing 3,158 ft., conglomerate 3,552 ft., drilling 3,620 ft.

Lario 1 Lynch, S½ SE SW 24-4-20w, anhydrite 1,543 ft., drilling 1,890 ft.

Reno County: Simpson 1 Snowbarger, SW SE NE 21-23-10w, first report.

Rice County: Bronson 1 Stratton, W½ NW SW 2-19-9w, first report.

Rooks County: Clay 1 Anderson, W½ SW SW 28-9-16w, Arbuckle 3,569 ft., T.D. 3,590 ft., P.B. 3,330 ft. in porous zone previously cored showing saturation.

Anderson-Prichard 1 Yeo, S½ SW NW 29-20-10w, anhydrite 389 ft., drilling 2,836 ft.

Hartman 1 Brothers, N½ NW NE 17-21-6w, Lansing 2,985 ft., conglomerate 3,517 ft., Mississippi lime 3,526 ft., saturation 3,530-38 ft. T.D., 5-in. 3,531 ft., standard tools.

Russell County: Derby 1 Gernon, W½ SW NE 20-13-15w, anhydrite 910 ft., drilling 2,280 ft.

Cities Service 1 Stoppel, NW NE SW 17-14-11w, drilling 1,230 ft.

Cities Service 1 Beisel, NE NE NW 15-14-12w, Arbuckle 3,315-40 ft., 4½-in. 3,301 ft., standard tools 3,340 ft.

Central 1 Harbaugh, NW NW NW 21-14-12w, first report.

Saline County: Stanolind 1 Karber, N½ SW SE 5-16-1w, T.D. 3,444 ft. in Arbuckle, P.B. 2,700 ft., acid, 1,500 ft. water in hole, P.B. 2,674 ft., drilled plug and cleaning out to reacidize.

Stafford County: Stanolind 1 Ahnert, E½ NE SE 26-22-13w, Lansing 3,395 ft., drilling 3,585 ft.

W. W. Drilling 1-A Wilson, N½ NW NW 5-25-14w, drilling 1,683 ft.

Northeastern Kansas

Brown County: McAlpine 1 Tyler, NE SW SW 4-3-15e, drilling 1,350 ft.

Doniphan County: Plymate & Bornholdt 1 Elliott, E½ SE SW 31-3-20e, drilling 1,320 ft.

Douglas County: Meinholdt & Edwards 1 Stanley, NW NE NW 3-14-21e, some show oil and gas and no

(Continued on Page 91)

EASTERN TEXAS FIELDS

Exploratory Play Spreading With 14 Wildcats Staked

By R. MARNE SANFORD

DALLAS, Tex., June 16.—A widespread renewed wildcat exploratory play has opened up in eastern Texas and is directly resultant from the recent Woodbine sand discovery in the Laneville area of Rusk County. There were 14 new exploratory tests either starting or preparing to start in seven different counties at the close of the past week. Many new drilling blocks in different counties are being pushed toward completion which assures continued wildcatting at a high pitch for the coming months.

SUMMARY OF COMPLETIONS

	No.	Bbl.	Footage
Oil: Hawkins	7	2,175	33,905
East Texas	8	389	28,826
Talco	1	530	4,291
Dry: Wildcats	8	.....	31,090
Total	24	3,094	98,112

The activity was divided as follows:

Rusk County: E. L. Baker 1 James Evans, 453 ft. from the N line and 2,402 ft. from the W line of a 115-acre tract in the W. H. Walters Sur., 1 mi. NW of New Salem, preparing to spud.

R. S. Kirby 1 D. R. Richardson, NE cor. Blk. 5, J. I. Sanchez Sur., about 2 mi. NE of Baker 1 Evans, location.

R. S. Kirby 1-A Hall Wood, Sanchez Sur., Blk. 10, about 1 mi. SW of same operator's 1 Richardson, old well drilling deeper from depth of 4,201 ft., now drilling at 4,207 ft.

Gordon C. Grasty 1 Kangerga Brothers, 467 ft. from the SE line and 1,170 ft. from the NE line of the Thomas Wood Sur., ¾ mi. NW of Ross & Phillips discovery, cemented 10-in. at 200 ft.

Parrott & Jaggars, Dallas, 1 Evans, 3-acre tract in the NW part of May Sur., in Laneville area and near Ross & Phillips Woodbine discovery, location.

Humble 1 Strong & Pool, J. R. May Sur., east offset to Ross & Phillips field discovery well, building derrick.

Smith County: Pruit & Pope 1 Cawthon, Jacob Sur., 3 mi. E of Bullard, Woodbine sand test, spudded and set surface casing.

O. L. Ross 1 J. R. Rushing, 467 ft. from the W line and 512 ft. from the N line of a 28-acre tract in the Jacob Herrin Sur., 2 mi. E of Whitehouse and ½ mi. N of the operator's 1 Willingham, same survey, abandoned after spudding.

Houston County: G. C. Dixon 1 T. W. Crowson, 147-acre tract in the Francis Perez Sur., 7 mi. SW of Lovelady, location.

Lone Star Gasoline Co. and Trinity Gas Corp. 1 G. L. Bolton, 400 ft. from the S line and 1,090 ft. from the E line of N½ of a 324-acre tract in the G. W. Wilson Lge., 5,900-ft. Woodbine test, Augusta area, location.

Henderson County: Amos & Perry 1 Smith, M. T. Equis Sur., near Poynter, Woodbine sand test on 12,000-acre block, location.

Madison County: Leon Dunn, Tyler, 1 Roy Jackson, SE cor. 126-acre tract in the A. Crownover Sur., 6 mi. SW of Madisonville, 2,500-ft. test, location.

Upshur County: Frank Darden 1 C. E. Kay, on a 6-acre tract in the townsite of Big Sandy, Carson Sur., Nacatoch sand test to 1,350 ft., preparing to drill.

Wood County: Al C. Bierman, Tyler, 1 P. F. Jones, 2,050 ft. from the W line and 120 ft. from the N line of the NE cor. of the Joseph Simkins Sur., but in the J. Sherman Sur., in the townsite of Alba, cellar and pits dug and moving in materials.

East Long Lake Gets Six-Well Extension Program

The recently opened East Long Lake field of Anderson County was in line for considerable drilling with the announcement of a six-well drilling program for the municipal airport property on the edge of the town of Palestine. The field is on the northeast flank of the Long Lake field proper and already has two producing wells on the townsite land. The F. H. E. Oil and Carter-Gragg Oil hold leases on two-thirds of the 265-acre airport tract for the town. A drilling program which will include at least six wells has almost forced the local flying club to abandon the airport as a landing field for planes. Work will start soon.

EAST TEXAS COMPLETIONS

Wildcats

(24-hr. gages)

Anderson County: B. T. Royalties 1 Coleman, NW cor. Coleman tract in J. A. Box Sur. 10, dry at 5,507 ft.

Griffin Bros. 1 Clayton, Wm. Frost Sur., Elkhart area, dry at 6,047 ft.

Lamar County: Whitehead & Dahl Bros. 1 J. M. Barr, P. Compton Sur., 9 mi. S of Paris, dry at 1,525 ft.

McLennan County: J. C. Kilgore 1 F. E. Huber, E. Goodnight Sur., 2 mi. SE of Ocee, dry at 491 ft.

Rusk County: W. W. Barber 1 J. A. McCreary, H. Huejas Sur., 6 mi. SW of Enterprise, dry at 3,703 ft.

Van Zandt County: Jackson & Thompson 1 Bruce, Jr., B. Bruton Sur., 2½ mi. NW of Myrtle Springs, dry at 4,409 ft.

Wood County: Ed Parson 1 Bellamy, F. L. Smith Sur., dry at 5,005 ft.

East Texas Field

(One-hour gages)

Longview area, Gregg County: Atlantic Ref. 13 C. Jones, 72 bbl., 3,621-3,703 ft., T.D. 3,732 ft.

Lucey Pet. 8 Christian, 60 bbl., 3,593-3,614 ft.

Trapp & Blankenship 4 Miles, 70 bbl., 3,474-3,518 ft.

Kilgore area, Gregg County: Overton Ref. 2 Crane, 30 bbl., 3,528-66 ft.

Shell 33 Willoughby, 40 bbl., pay 3,539-44 ft., 3,549-54 ft., 3,558-63 ft.

Tide Water 33 Barton, 50 bbl., 3,566-74 ft.

Titan Oil 7 Dickson, pumped 31 bbl. in 6 hr., 3,541-94 ft.

Joiner area, Rusk County: Tide Water 15 Shaw, 48 bbl., 3,659-65 ft.

Other Field Completions

Talco, Franklin County: Humble 27 Penn-fee, 65 bbl. in 3 hr., pumping, T.D. 4,291 ft., pay 4,244-52 ft.

Talco, Titus County: Magnolia 9 Chapman, dry at 4,403 ft.

Hawkins, Wood County: Bracken Oil 1 McKnight & Rosen, dry at 5,003 ft.

Roger Lacy 1 Beck, 126.9 bbl. in 6 hr., ¼-in. choke, T.D. 4,784 ft., pay 4,592-4,670 ft.

Humble 1-B Ponder, 95.76 bbl. in 6 hr., ¼-in. choke, T.D. 4,830 ft., pay 4,535-4,710 ft.

Humble 2-A Ponder, 88.28 bbl. in 18 hr., ¼-in. choke, T.D. 4,865 ft., pay 4,845-52 ft.

Humble 1 Moody, 114.54 bbl. in 6 hr., ¼-in. choke, 4,692-52 ft., T.D. 4,824 ft.

Humble 1-B Christian Women's Board of Missions, 338.85 bbl. in 18 hr., ¼-in. choke, 4,831-46 ft., T.D. 4,876 ft.

Rudco Oil & Gas 1 Methodist Church, 121.25 bbl. in 6 hr., ¼-in. choke, 4,572-90 ft., T.D. 4,812 ft.

General American 1 Lott, 108.3 bbl. in 6 hr., ¼-in. choke, 4,666-96 ft., T.D. 4,818 ft.

EASTERN TEXAS WILDCAT REPORT

Anderson County: Huddleston & Prater 1 Praff, R. Allen Sur., 5 mi. NW Palestine, S.D. at 1,550 ft.

Angelina County: S. D. McDaniel 1 Bonner, Sarah Odel Sur., T.D. 1,210 ft., P.B. to 1,020 ft., S.D.

Camp County: Lucey 1 McKenzie, L. Williams Sur., ¾ mi. W of Pittsburg field, drilling 7,349 ft.

Cherokee County: Bobby Manziel 1 Nagel, T. Timmons Sur., 3½ mi. NW Mount Selman, top Austin 4,610 ft., drilling 4,960 ft.

Fannin County: H. W. English 1 Parkhurst, M. P. Davis Sur., 7 mi. W of Leonard, derrick.

Freestone County: Westbrook & Whistler 1 Coleman, H. Howard Sur., 2½ mi. SW of Streetman, derrick and rig.

Henderson County: British American Oil 1 Young, Joseph Rice Sur., 7½ mi. SW of Athens, top Austin 3,400 ft., drilling 3,880 ft.

H. A. Clark 1 A. G. Scott, H. F. Thornton Sur., 2 mi. W of Franklin, derrick.

Rusk County: Ross Sears 1 Pool, George May Sur., Laneville area, 4,128 ft., making 7 bbl. per day and 55,000 cu. ft. gas, S.I. 4,128 ft.

E. L. Baker 1 J. Evans, 2,402 ft. from W line and 453 ft. from N line James Evans 115.25-acre tract, W. H. Walters Sur., location.

G. C. Grasty 1 Kangargo Bros., 467 ft. from SE line and 1,170 ft. from NE line 100-acre tract, T. Wood Sur., 8 mi. W and N of Laneville, 10-in. 200 ft., T.D. 210 ft., S.D.

R. S. Kirby 1 D. K. Richardson, 467 ft. from N and E lines, Blk. 5, J. I. Sanches Sur., 9 mi. W Laneville, location.

R. S. Kirby 2 Hall Wood, old well drilling deeper, 9 mi. W of Laneville, J. I. Sanches Sur., old T.D. 4,201 ft., new T.D. 4,207 ft., preparing to drill ahead.

Smith County: Marvin H. McMurray 1 Guilden & Becker, 26-acre tract in M. Culberson Sur., 1½ mi. W of Mount Sylvan, 8,000-ft. test, top Austin 4,646 ft., drilling 5,036 ft.

Iowa-Payne Oil 1 Spring Lake Club, John Lane Sur., 5 mi. N of Tyler, drilling 4,412 ft.

R. L. Pruitt and C. M. Pope, Jr., 1 S. L. Cawthon, SE cor. 50-acre tract in Jacob Mast Sur., 3 mi. E of Bullard, spudded to 250 ft., 10-in. 250 ft.

Wood County: Fred Browning and J. C. Robbins 1 M. N. Andrews, SW cor. J. R. Smith Sur., 9 mi. N of Hawkins, location.

A. C. Bierman 1 P. F. Jones, 2,050 ft. out of W and 120 ft. out of N NE cor. of Joseph Simpson Sur., Alba townsite, pits.

SOUTHWEST TEXAS

Mile-West Extension in New Sand at Midway Indicated

By F. L. SINGLETON

CORPUS CHRISTI, Tex., June 16.—Main interest in the Southwest Texas district centered on the Midway field, San Patricio County, where a new sand discovery appears to be of major importance. Other developments of interest included a probable mile-northeast extension to the La Rosa field, and the logging of oil and gas showings in a wildcat located in the Kitty area, Live Oak County.

A mile-west extension to the new sand opened on the north side of the Midway field, San Patricio County, was indicated by the showing of F. W. Boykin 1 A. W. Schivner which is drilling deeper following a 15-minute drill-stem test at 6,070-78 ft. which tested 230 lb. working pressure and recovered 300 ft. of 38-gravity oil. Sand and shale showing oil and gas were cored at intervals from 6,200-18 ft., but a drill-stem test recovered 30 ft. of oily mud, 1,000 ft. of salt water, and tested 75 lb. working pressure. The well is located in the S.A.&M.G. Survey 5, and is located on a farmout lease from Sun Oil Co. The 6,000-ft. sand section corresponds with that of British American 3 Ivey on the north side of the field, recently completed through perforated casing at 6,050-51 ft., for an initial production of 68 bbl. per day through a 13/64-in. choke. Main production heretofore has been from the Frio sand at 5,300 ft., and while the field was opened in 1937, it was not until the last few months that development of the structure has been resumed. At a recent date 30 wells had been completed in the 5,300-ft. sand having a daily initial production of 1,380 bbl.

LA ROSA.—A revival of drilling on the northeast side of the La Rosa field, Refugio County, was in prospect following the showing of Norsworthy Production Co. 1 J. G. Toland, which recovered 510 ft. of oil and 90 ft. of salt water on a 15-minute drill-stem test at 6,205-29 ft. Location is in Section 39, Bonnie View subdivision, and protection around the well is held by several companies.

Wilcox Test in Live Oak County Cores Oil Sand

Continental 1 George West, a Wilcox test, 2 miles east of Kitty, Live Oak County, was being watched with interest as it cores in shale and sand below 6,817 ft. Side-wall cores recovered sand with an oil odor at 5,423 ft., shaly sand with a gas odor was logged at 5,572 ft., and sand with oil odor was logged at 5,670 ft. From 6,643-53 ft., 7 ft. of sand with a good showing of oil was reported to have been cored, and the well is drilling ahead without making a drill-stem test. The Queen City was topped at 5,340 ft., and the showings are believed to be in the Sparta or Wilcox, although the top of the geological markers were not available. Edwin M. Jones 3 George West, 4½ miles southwest of the town of George West, is coring in sand below 9,546 ft. Additional sand showing gas was recovered in cores at 9,487-90 ft., and at 9,540-46 ft. This is a projected 11,000-ft. test, and encouraging showings have already been logged.

PREMONT.—An extension to the Premont field, Jim Wells County, was indicated as J. A. McCartney prepared to cement casing in 1 Seeligson, Unit 5, after a 25-minute drill-stem test at 3,707-23 ft., recovered 270 ft. of oil and 3 gal. of salt water. In the Seelig field, Magnolia 1 Laughlin, an offset to the discovery well, is drilling in shale below 5,593 ft. The same company's 1 Seeligson, Unit 3, a wildcat, is drilling in shale below 6,290 ft.

RED FISH BAY.—In Red Fish Bay, offshore from Aransas County, Humble Oil & Refining Co. was preparing to retest 1 State, after the well flowed hot salt water on a production test through perforated casing at 8,624-30 ft.

SAXET.—Location for another 10,000-ft. test was announced for the Saxet field, Nueces County. The well is Southern Minerals Corp. and Houston Oil Co. 1 R. M. and L. S. Lawrence, in Section 313, G.C.&S.F. R.R. Survey. The location is about 4,200 ft. north of Texon Royalty Co. 10 A. Kocurek, another projected deep test. Although no wells have been completed in the 10,000-ft. sand, two tests drilled to below 9,500 ft. logged encouraging showings, but due to mechanical trouble no successful test of the section was ever made.

AGUA DULCE.—As a second producer was marked up for the "Hawn" sand in the extreme southeast side of the Agua Dulce field, four other wells were nearing the pay and should be completed during the week. The new producer was R. W. Hawn 1-A Wofford, an offset to 1 Wofford, completed for an average producer in sand at 6,984-94 ft.

Caldwell County Wildcat Testing

In the Balcones fault line district, Nienaber et al 1 W. F. Elband, 1½ miles west of Luling, Soloman Seal Survey, is reported to have cemented casing for a production test. Total depth is 2,278 ft. in chalk, topped at 2,235 ft., and broken formation with an oil show was cored at 2,255-60 ft.

BEE CREEK.—In the Bee Creek field R. R. Ogden 11-A Miears has been completed for one of the best producers in the field. Total depth is 2,209 ft., and production is from chalk at intervals from 2,094-2,207 ft. During an early test, the well flowed 446 bbl. of oil in 12 hours.

Northeast of Burlington, Milam County, Hamman Oil & Refining Co. is preparing to spud 1 M. C. Powers, an Edwards lime test located in the B. F. Brewster Survey.

SUMMARY OF COMPLETIONS

Lower Gulf Coast District

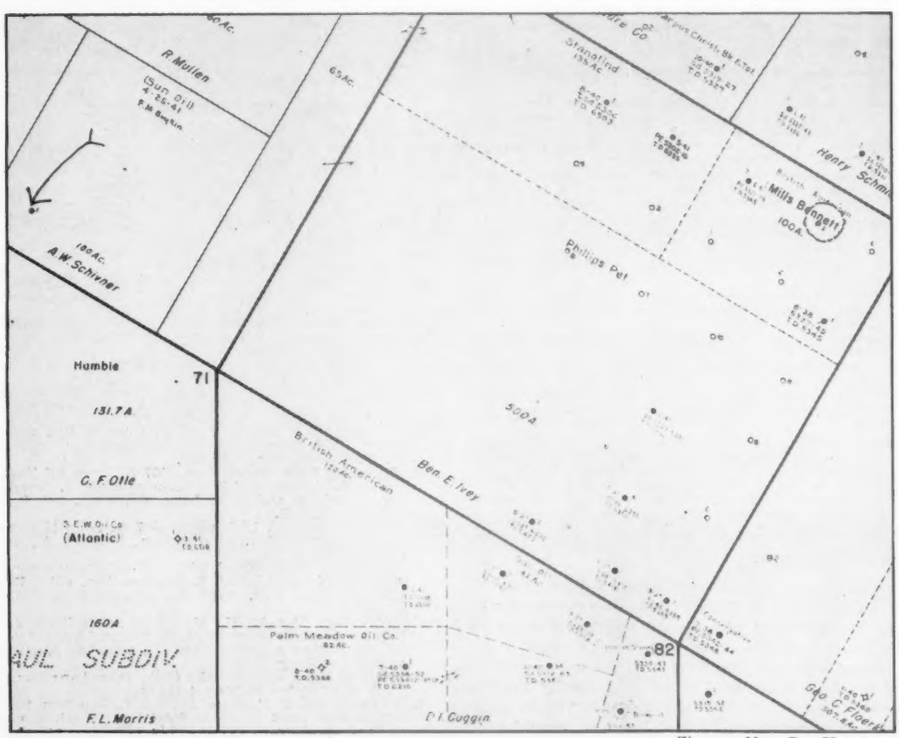
	No.	Bbl.	Footage
Oil wells: Fields	14	3,282	86,652
Dry holes: Fields	3	.....	12,515
Wildcats	1	.....	7,020
Total	18	.....	106,187

Laredo District

	No.	Bbl.	Footage
Oil wells: Fields	11	988	42,874
Gas wells: Fields	3	.....	9,346
Dry holes: Fields	2	.....	3,882
Wildcats	3	.....	7,956
Total	19	.....	64,058

San Antonio District

	No.	Bbl.	Footage
Oil wells: Fields	2	3	1,946
Dry holes: Wildcats	2	.....	4,791
Total	4	.....	6,737



Zingery Map Co., Houston

British American Oil Co. 3 Ivey, new sand discovery (indicated by circle) on north side of Midway field, San Patricio County, and F. M. Boykin 1 A. W. Schivner, 1 mile west of production which is showing for a producer in same sand

SOUTHWEST TEXAS COMPLETIONS

LOWER GULF COAST WILDCATS

Bee County: W. D. Walton 1 Tos-Tenson, dry, T.D. 4,996 ft.

Nueces County: R. S. Waldron 1 Singer, dry, T.D. 7,020 ft.

FIELDS

Agua Dulce, Nueces County: R. H. Hawn 1-A Wofford, 209 bbl., ⅛-in. choke, perf. casing 6,984-94 ft., T.D. 7,050 ft.

Clara Driscoll, Nueces County: Texas Conservative 4 Huie, 180 bbl., 11/64-in. choke, perf. casing 5,440-45 ft., T.D. 5,528 ft.

East Telferner, Victoria County: Houston 1 Wood, dry, T.D. 6,425 ft.

Heyser, Victoria County: Gulf 55-B Traylor, 126 bbl., ⅛-in. choke, sand 5,478-85 ft.

Midway, San Patricio County: British American 3 Ivey, 68 bbl., 13/64-in. choke, perf. casing 6,050-51 ft., T.D. 6,500 ft.

Orange Grove, Jim Wells County: Cities Service 3 Schueneman, 40 bbl., 3/32-in. choke, perf. casing 5,070-72 ft., T.D. 5,114 ft.

Tide Water 4 Herman, 218 bbl., 11/64-in. choke, perf. casing 5,084-5,100 ft., T.D. 5,114 ft.

Refugio, Refugio County: Hewitt & Dougherty 1 Reilly, 151 bbl., 7/64-in. choke, perf. casing 5,666-74 ft., T.D. 6,768 ft.

Richard King, Nueces County: Damascus Corp. 3 Pope, 60 bbl., ⅛-in. choke, perf. casing 5,334-36 ft., T.D. 5,702 ft.

Southern Mineral 21-B King, 92 bbl., 7/64-in. choke, perf. casing 5,648-51½ ft., T.D. 5,657 ft.

(Continued on Page 83)

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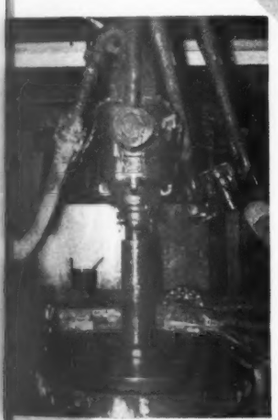

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Oil in Terry Co. Test Between Slaughter and Wasson Fields

By R. MARNE SANFORD

MIDLAND, Tex., June 16.—Shows of oil have been drilled in a wildcat test in northwestern Terry County and between the northern edge of the Wasson field and the south end of the Slaughter field. Although there is little possibility of the new wildcat developing a link area between the two large West Texas fields, it is significant that production is now indicated on the same trend that connects Wasson and Slaughter, two of the largest fields in West Texas.

The indicated discovery is Texas 1 Murphy, located 660 ft. from the north and west corner of Section 22, Block K, P.S.L. Survey, 9 miles southwest of production in the south end of the Slaughter field in Terry County and 10 miles northeast of the Livermore 1 Shell-Ernest Ownby, northeast extension to the Waples Platter area of the Wasson field in Yoakum County. No. 1 Murphy was cored from 5,252 to 5,272 ft. and recovered only 4 ft. of which 3½ ft. was brown crystaline dolomite showing oil saturation. The test was corrected to a total depth of 5,275 ft., the bottom foot being in anhydrite. The 5½-in. casing was cemented at 5,166 ft. and plug was drilled late in the week. At last reports the hole was being bailed down. It has 2,000 ft. of fluid, mostly water, in the hole.

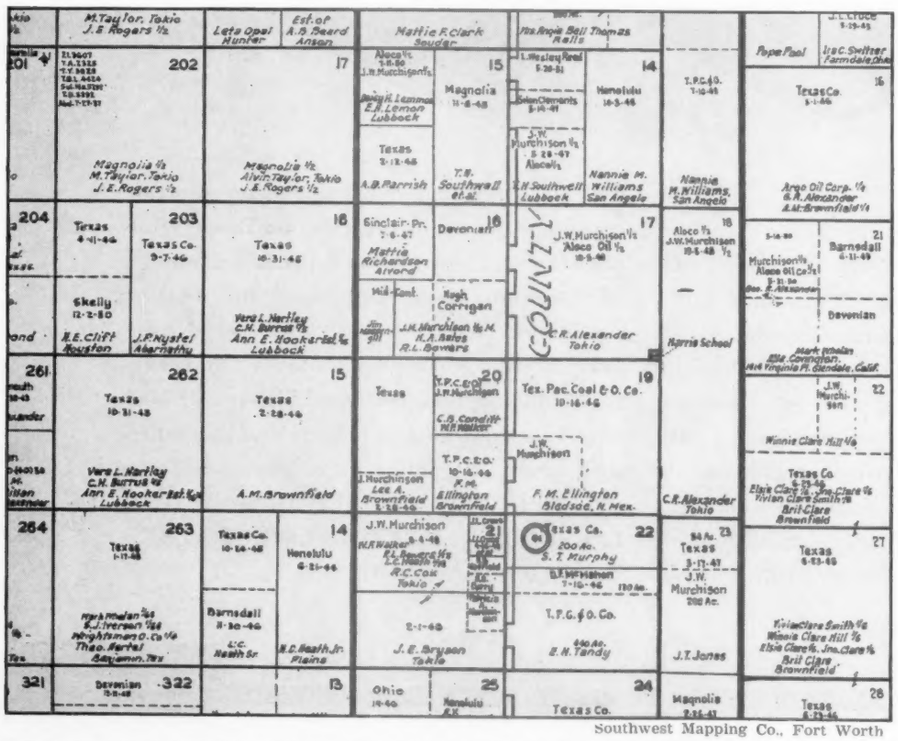
Even though the Slaughter field was extended into Terry County on the north about a year ago, the new wildcat will be the first actual field discovery in Terry County. The extent of the structure has been known for several years, and there has been considerable leasing and royalty buying in the area for the past 3 years. The structure has been outlined by seismograph. Texas Co. and Texas Pacific Coal & Oil Co. are the major lease holders.

Exploration has been assured in east central Terry County through the staking of a wildcat test by Anderson-Prichard Oil Corp. and Osage Drilling Co. It is to be the partnership's 1 F. B. Christman, 660 ft. from the south and west lines of Section 49, Block T. D.&W. Survey, 3½ miles southeast of Brownfield. Having a 5,500-ft. contract depth, cellar and pits have already been dug. There has been no deep exploration in the vicinity of the operation.

Wasson Deep Level Gets New Drilling

There are two operations now seeking the deep Tubb pay of the original Wasson area in the northern part of Gaines County. The deeper pay was opened by the Amon G. Carter 4-D Wasson last year. Plymouth Oil is planning to deepen a producer in the Bennett sector to the lower pay. It is No. 3-A Bennett, 440 ft. from the north and 1,320 ft. from the east lines of the SE Section 632, Block D, Gibson Survey, on the extreme northwestern corner of the Bennett field.

Another Yoakum County test which will seek the lower pay is the Osage Drilling Co. 1 M. B. Sawyer, Section 702, Block D, Gibson Survey. This test is an old failure about 7 miles north of the deep-level discovery which is in extreme north Gaines County. The other Bennett sector test scheduled for deepening is about 9 miles north and 5 miles east of the deep producing area.



Southwest Mapping Co., Fort Worth

West Texas' newest prospective field discovery is Texas Co. 1 Murphy, in the northwestern part of Terry County and just inside the Terry County line. Saturation has been drilled in broken section from 5,252-72 ft. and at last reports the well was swabbing out hole and preparing to test. Casing had been cemented at 5,166 ft. The promised strike is about 10 miles northeast of the edge of production in the Wasson field of Yoakum County and about 9 miles southwest of production in the Terry County portion of the Slaughter field. A link between the two fields is not considered likely

Slaughter Field Is Extended Three Miles North

The ever-expanding Slaughter field of Hockley, Cochran and Terry counties has been assured a new 3-mile north extension. The promising outpost is John O'Neal and G. W. Wheeler 1 Della Slaughter Wright, 3 miles north of the west end of production on the Cochran County side of the field. Treated with 1,500 gal. of acid, the second treatment of 3,500 gal. in the pay from 4,943-83 ft. started the well flowing into the pits. After a 36-hour preliminary swabbing period the well was making 10 bbl. of oil hourly.

There is some thought that the well has tapped a new reservoir for the area since the gas showing is sweet gas, the second such show found in the county. The operators hold a 4,100-acre block in the area and are planning another test immediately.

SUMMARY OF COMPLETIONS

Northern West Texas

	No.	Bbl.	Footage
Oil: Wasson	7	5,259	35,807
Slaughter	9	9,593	44,982
Sharon	2	367	4,895
Other fields	2	931	6,590
Total	20		92,274

Southern West Texas

	No.	Bbl.	Footage
Oil: Noelke	2	393	2,461
Johnson	2	944	8,340
North Cowden	3	1,448	13,678
White & Baker	2	143	3,982
Other fields	9	5,820	28,526
Dry: Wildcats	1		10,659
Total	19		67,646

Southeast New Mexico

	No.	Bbl.	Footage
Oil wells	2	37	6,749

NORTHERN WEST TEXAS COMPLETIONS

(24-hr. ratings based on last 3 hr. of 6-hr. gage)

Dockery-Robbins, Mitchell County: F. W. Merrick 1 Mills, 224 bbl. daily, pumping, 660-qt. shot 1,560-1,720 ft., T.D. 1,730 ft.

Sharon, Scurry County: Pearson & Sibert Oil 3 Bishop, 210 bbl. daily, pumping, 1,180-qt. shot 2,195-2,449 ft.

Pearson & Sibert Oil 2 Burney, 157 bbl. daily, pumping, 920-qt. shot 2,262-2,446 ft.

Slaughter, Terry County: Gulf Oil 6 Mallett, 1,539 bbl. daily, 2,000 gal. acid, 5,000-5,025 ft.

Slaughter, Cochran County: P. Livermore 2 Boyd, 944 bbl. daily, 10,000 gal. acid, 4,995-5,058 ft.

Slaughter, Hockley County: S. W. Richardson 5 Coe, 1,329 bbl. daily, 10,000 gal. acid, 4,885-4,985 ft.

S. W. Richardson 7 Coe, 777 bbl. daily, 10,000 gal. acid, 4,885-4,985 ft.

S. W. Richardson 9 Coe, 836 bbl. daily, 10,000 gal. acid, 4,885-4,977 ft.

S. W. Richardson 12 Coe, 1,021 bbl. daily, 10,000 gal. acid, 4,885-4,985 ft.

S. W. Richardson 16 Slaughter, 1,140 bbl. daily, 8,000 gal. acid, 2-in. casing outlet, 4,890-4,988 ft.

S. W. Richardson 17 Slaughter, 1,146 bbl. daily, 10,000 gal. acid, 2-in. casing outlet, 4,875-5,004 ft.

W. J. Richardson 4 Allison, 861 bbl. daily, 10,000 gal. acid, 2-in. casing outlet, 4,880-4,985 ft.

Wasson, Gaines County: Continental Oil 2-45 W. M. Moore, 924 bbl. daily, ¾-in. choke, 4,000 gal. acid, 4,980-5,054 ft.

Continental and Carter 11-48 Wasson, 1,065 bbl. daily, 8,000 gal. acid, 4,900-4,967 ft.

Continental 3-49 Wasson (old well drilled deeper), 878 bbl. daily, ¾-in. choke, old T.D. 4,986 ft., new T.D. 5,056 ft.

Cedar Lake, Gaines County: Stanolind 3 Bremont, 707 bbl. daily, 680-qt. shot 4,690-4,820 ft., T.D. 4,860 ft., P.B. to 4,830 ft.

Wasson, Yoakum County: Carter and Continental 11 Willard, 1,236 bbl. daily, 9,000 gal. acid, 4,860-5,040 ft.

Denver Prod. 30 Whittenberg, 670 bbl. daily, 10,000 gal. acid, 4,815-5,180 ft.

Drilling & Exploration 1-A Randell, 298 bbl. daily, ¾-in. choke, 10,000 gal. acid, 4,905-5,106 ft.

J. W. Murchison 2 Sawyer, 188 bbl. daily, ½-in. choke, 8,000 gal. acid, 5,055-5,264 ft.

NORTHERN WEST TEXAS ACTIVE WILDCATS

Andrews County: Magnolia 1 Ralph, NE cor. Sec. 20, Blk. 39-A, P.S.L. Sur., drilling below 4,493 ft.

Phillips 1 University-Drews, NW NE Sec. 32, Blk. 10, University Lands Sur., coring below 8,364 ft.

Mascho Oil 1 Fisher, NE NE SE Sec. 16, Blk. 36-A, P.S.L. Sur., S.D. at 4,602 ft.

Mascho Oil 1 University, Sec. 11, Blk. 13, University Sur., 6½ mi. NW of 1 Fisher, 8⅝-in. 1,798 ft., drilling at 3,975 ft.

Mascho Oil 1 Univ.-Gulf, NW cor. Sec. 19, Blk. 9, University Sur., drilling below 3,855 ft.

T. P. Coal & Oil and Seaboard 1-C Midland Farms, 660 ft. from S and E lines Sec. 8, Blk. 41, G.M.M. B.&A. Sur., 5,000-ft. test.

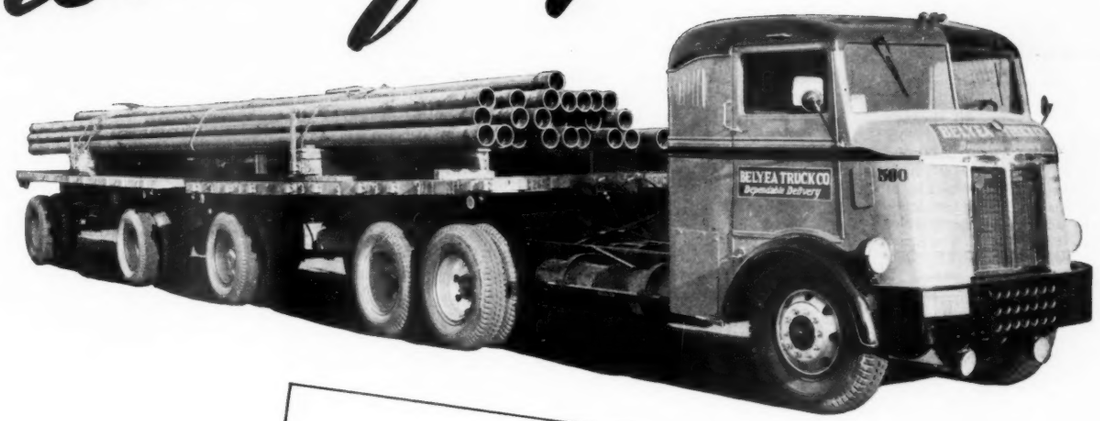
Borden County: Coffield & Guthrie 1 Conrad, SE NW Sec. 79, Blk. 20, Lavaca Nav. Co., Sur., 3,250-ft. test, spudding.

Cochran County: O'Neal Drilling Co. 1 Wright, NE cor. Lab. 12, Lge. 60, Martin C.S.L. Sur., 3 mi. N of Dean area, 5½-in. 4,940 ft., T.D. 4,983 ft., acidized 1,500 gal., prepare to reacidize 3,000 gal.

Gaines County: Amon G. Carter 4-D Wasson, NW SE

(Continued on Page 82)

Before you buy new equipment



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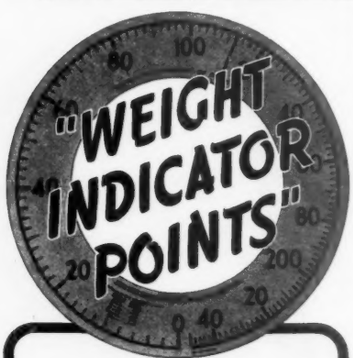

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Among the Drilling

H. E. WILLIAMS, Houston, Tex., has reached the expected pay horizon in an outpost test to the Lochridge field, Brazoria County, Texas, and a drill-stem test was being made below 6,300 ft. The well is 1 Montrose Realty Co., and is being drilled jointly with John Mayo.

GLENN HARROUN, Laredo, Tex., contractor, has been awarded work of drilling a well to 5,000 ft. in the Lopeno field of Zapata County, Texas, for Venture Petroleum Corp. The test, contract for which should carry it 1,000 ft. in the Wilcox, is in the R. Ramirez Survey, Porcion 19. Venture Oil Corp., discoverer of the Lopeno field, is headed by R. B. Morrison of Laredo.

PIKE Drilling Co. of Kern County, California, is drilling a test for General Petroleum Corp. midway between the Rio Bravo and the Greeley fields of California in an attempt to join the two fields. In the past General Petroleum Corp. has been successful in every attempt to extend the Greeley field to the northwest.

TRINITY Drillers, Inc., San Antonio, Tex., apparently extended production in the La Rosa field, Refugio County, Texas, about 1 mile northeast as a drill-stem test at Norsworthy Production Co. 1 J. G. Toland recovered pipe-line oil on a drill-stem test at 6,200 ft. Another operation is reported in Starr County, Texas, where a 6,000-ft. wildcat is being drilled for Snowden & McSweeney.

JACK W. FRAZIER, Houston, Tex., abandoned an 8,500-ft. wildcat in Orange County, Texas, and the rig is being moved to the Eureka field, Harris County, Texas. One producer and one dry hole were chalked up for the Dyersdale field, Harris County, and additional development is being started.

McQUEEN & CLEVENGER, who have recently established district offices at Houston with R. O. Harris as district manager, report two active operations. One diesel-powered rig is running at the Gueydan field, Vermilion Parish, Louisiana, for Fohs Oil Co., and the other, a steam rig, is located near Kitty in Live Oak County, Texas, for Continental Oil Co. The latter is a Wilcox test located on the George West estate and looms as the discovery well of a new field as favorable showings of oil and gas have been logged at intervals from 5,400-6,650 ft.

OSAGE Drilling Co., Midland, Tex., has joined Anderson-Prichard Oil Corp. of Oklahoma City, Okla., in plans for a 5,500-ft. wildcat test in Terry County, Texas. The partnership will drill 1 Frances Brownfield in the SW cor. Section 49, Block T, D.&W. Survey, 3½ miles southeast of Brownfield. Osage has another rig running on its M. B. Sawyer lease, Section 702, Block D, Gibson Survey, Yoakum County, Texas, on the north side of the Wasson field.

M. J. DELANEY Co., of Dallas, Tex., is moving in rotary rig for a 5,000-ft. wildcat test in southwestern Martin County, Texas. This project is the Wiggins & Hyde 1 Stimson & Burley, located in the C SW Section 4, Block 38, Township 1s, T.&P. Survey. The contract was sublet by H. B. Herring, also of Dallas, who originally took the drilling deal with Wiggins & Hyde.

CROSBY Drilling Co., Houston, Tex., new discovery 2½ miles west of Clodine, Fort Bend County, Texas, opened the previous week for Providence Oil Co., is flowing at the rate of 60 bbl. of fluid per day through a 9/64-in. choke. Twenty per cent of the fluid is salt water and the remainder 41.6-gravity oil. The well is 1 Hatfield, completed in the Yegua sand at 7,400 ft.

PATON BROTHERS, of Artesia, N. M., have contracted to drill the Culbertson & Irwin, Inc., of Midland, Tex., 1 E. M. Wingfield, a 5,000-ft. wildcat 4½ miles south of the Corbin area in Lea County, New Mexico. The test will be drilled with cable tools.

FRANK J. BRAHANEY, of Odessa, Tex., has received contract for drilling a 5,500-ft. rotary wildcat in Andrews County, Texas. The test is the Texas Pacific Coal & Oil Co. and Seaboard Oil Corp. 1-C Midland farms, 660 ft. from the south and east lines of Section 8, Block 41, G.&M.M.B.&A. Survey.

BROWN Drilling Co. of California has completed the second well in the new Vernalis gas field for Standard Oil Co. of California. The well, 2 Blewett, was drilled to 5,507 ft. and plugged back to 3,869 ft. where it produced 4 million cubic feet of gas per day through a ⅜-in. choke. The new field is in the middle of the San Joaquin Valley just west of Modesto, Calif. Completion of the second test as a commercial gas producer proves the presence of sizable gas reservoir.

CROW Drilling Co., Shreveport, La., has been awarded the contract for a 4,500-ft. wildcat located in the C SE Section 23-5n-3w of Arkansas County, Arkansas. The test will be drilled for Blackwell Oil & Gas Co. on a block assembled by C. W. Robinson in 1940.

E. A. BENDER, drilling contractor of Bakersfield, Calif., has moved a portable rig with collapsible mast to the coastal area where he is drilling a test for Trans-Oceanic Oil Co. near the east end of the Santa Barbara Mesa field of California.

MORRIS-HAMILTON Drilling Co., Houston, Tex., extended Cockfield production in the Garwood field, Colorado County, Texas, about 933

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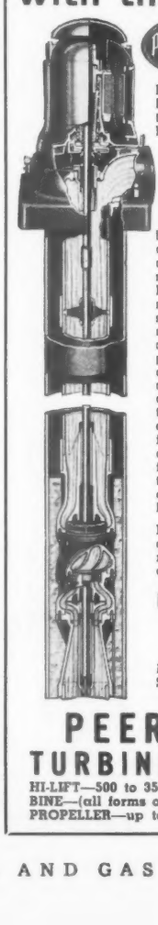

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Contractors

ft. west with the completion of W. R. Davis Co., Inc., 2-B Brownson which is flowing from sand at 6,100 ft. Other operations are reported in the Rincon field, Starr County, Texas, for the same company.

BELL & LOFFLAND, drilling contractors headquartered in Los Angeles, Calif., have started drilling a wildcat of the rankest type for Richfield Oil Corp. on the Tejon ranch in the southeast corner of the San Joaquin Valley, California. The land is unsurveyed, and formations are essentially unknown.

HASSIE HUNT, contractor on the Sinclair-Wyoming Oil Co. 1 C. C. Swayze, wildcat in Yazoo County, Mississippi, was drilling below 6,980 ft. at this test 15 miles northeast of the Tinsley field. Located on a 2,300-acre block in the W½ of 23-12n-1e, the wildcat topped the Selma at 4,452 ft., the Eutaw at 5,410 ft., and at last reports was drilling in a hard shale.

J. E. BRANTLY, president of Drilling & Exploration Co. of Los Angeles, Calif., is completing an inspection of his drilling operations being carried on for the Brazilian Government. Having been in Brazil for more than 2 months, he will return to Los Angeles about July 1.

F. H. BROWN, Illinois drilling contractor, at last reports was coring for the McClosky, after failing to get a show of oil in the Cypress sand, at the Ward Wickwire 1 Davis-Redding in Gibson County, Indiana. The wildcat is located 4 miles south of Mount Carmel, in SW SE SW 8-2s-12w. The Menard zone was topped at 1,740 ft., Glen Dean at 1,970 ft. and Barlow at 2,176 ft.

R. E. KING last week spudded a new test in the Hatfield area of Spencer County, Indiana, for Arthur Clark. The test is the 1 Peoples, in NW NE 7-7s-7w, and is an east offset to Sycamore Oil Co. 1 Prudential drilled to the McClosky some 2 years ago. The test will be drilled with cable tools.

J. W. SCOTT, Greggton, Tex., has been awarded contract for drilling a wildcat in the Whitehouse area of Smith County, eastern Texas, for O. L. Ross of Beaumont, Tex. The well is the 1 J. R. Rushing in the Jacob Herrin Survey, 10 miles southeast of Tyler and ½ mile north of Ross 1 Willingham in the same survey which was abandoned some time ago after spudding. Materials are being moved in for the test, which will be to the Woodbine at about 4,600 ft.

CALIFORNIA COMMERCIAL Drilling Co. has contracted to drill a well of a type that has seldom if ever been attempted. In the old Midway field among producers 30 years old, the new well will be drilled to the old producing sand, thereby giving interesting information on oil-sand drainage. Since the old wells were drilled with standard tools before the cable-tool core barrel, the knowledge of the producing interval is scanty. The new well will be cored continuously in order to provide information that will be useful in reconditioning the old wells. The well will be drilled on the 160-acre lease between Taft and Fellows, Calif., for Willmax Oil Co. of Bakersfield, Calif.

E. M. SHIELDS, drilling contractor of Mount Pleasant, Mich., has been awarded contract for drilling two new Michigan wells, both for Socony-Vacuum Oil Co., Inc. In Allegan County's Salem field contract was received for the 3 G. Ledger in NE SW NW 14-4n-13w, and in the Lincoln field of Arenac County, Shields will drill the Socony 1 C. Danckert in NE SE NW 9-18n-4e.

OLSON Drilling Co., Tulsa, has made a location for a Wilcox sand test to be drilled in N½ NE SE 33-18-3w, Logan County, Oklahoma, northeast of the city of Crescent. The well will be known as Olson et al 1 Faulk.

KERR-LYNN & CO., Oklahoma City, Okla., has the contract for a 6,300-ft. or Wilcox sand test south of Newalla in Cleveland County, Oklahoma—the Luther E. Mayes et al 1 McCommins, NW NE NE 15-10-1. Derrick has been completed and 500 ft. of surface pipe set.

LUPHER Drilling Co., Mount Pleasant, Mich., has been awarded contract for drilling two wells for Pure Oil Co. in the Winterfield pool of Clare County, Michigan, and a third in the Lincoln field of Osceola County, Michigan. Also in the latter field Lupher will drill the 1 Henry for Gulf Refining Co. Rigs have been built for the two wells in Winterfield, while at the Gulf 1 Henry, 6-in. casing has been set. At the Pure well in the Lincoln field, its 1 Mary Lomp, the contractor is drilling below 900 ft.

AMERICAN Drilling Co., Saginaw, Mich., is moving in materials for the third well of a five-well drilling campaign for gas reserves, being carried on by L. & S. Drilling Co. in the Deerfield area of Isabella County, Michigan. The well is the 1 Cottrell, ½ mile west of the L. & S. 2 Winesburgh, most recently completed gas well. American is drilling all the five wells with rotary, on a well-a-week schedule.

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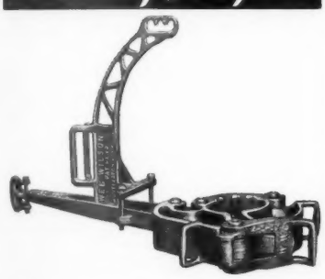
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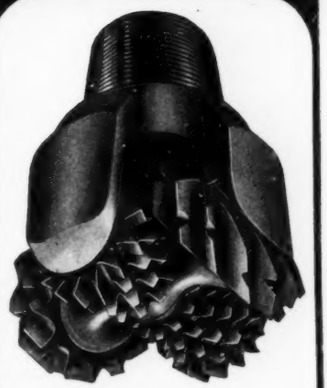
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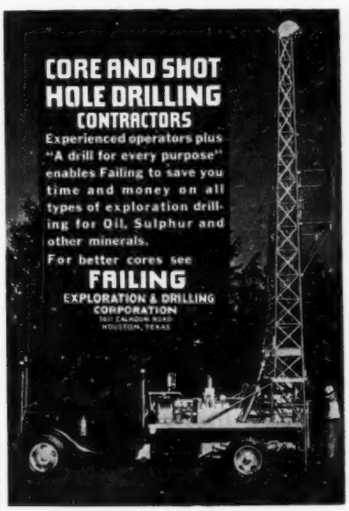
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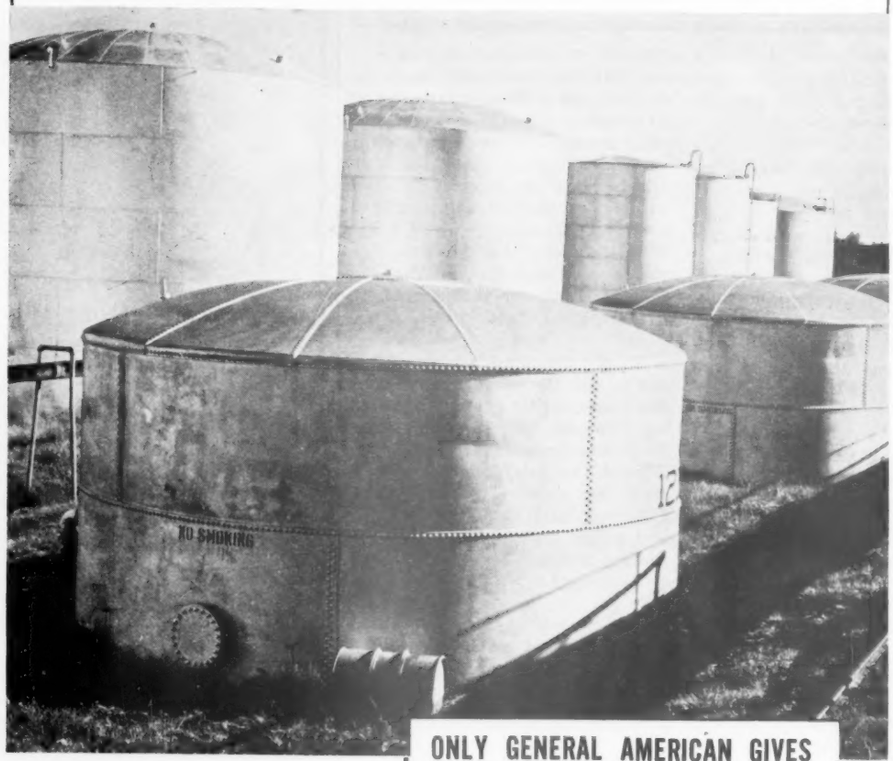

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Permian Basin

(Continued from Page 78)

Sec. 50, Blk. AX, P.S.L. Sur., drilling at 10,565 ft., last report.
Hale County: Humble 1 Byrd, SE SE NE Sec. 17, Blk. K, E.T.R.R. Sur., 9,000-ft. test, 9⅝-in. 4,396 ft., drilling below 6,660 ft.
Martin County: Wiggins & Hyde 1 Stinson & Burley, NE SW Sec. 4, Blk. 38, T.&P. Sur., 5,000-ft. test, spudded 255 ft., set 13-in. casing.
Terry County: Texas 1 S. T. Murphy, NW NW NW Sec. 22, Blk. K, P.S.L. Sur., 5,500-ft. test., sat. 5,252-72 ft., 5½-in. 5,166 ft., T.D. 5,275 ft., testing.
Anderson-Prichard and Osage 1 Frances Christman, 660 ft. from W and S lines Sec. 49, Blk. T, D.&W. Sur., 5,500-ft. test, moving in material.
Yoakum County: Dr. Sam Dunn 1 Moore, Sec. 486, drilling below 3,315 ft.
Shell 1 M. L. Hammer, 330 ft. from W and S lines Sec. 490, Blk. D, J. H. Gibson Sur., 5,700-ft. test.

East Outpost to Kermit Field Gets Show in Lower Pay

A wildcat outpost a mile east of the northern part of the Kermit field in Winkler County encountered promising oil shows at the close of the week and was coring ahead. The wildcat is Magnolia 20 State-Walton, Section 4, Block 3-B, P.S.L. Survey. The section showing oil is below the regular pay level of the Kermit field and is tentatively identified as comparable to the Tubb horizon found in Crane County to the southeast. The test was cored from 4,871 to 4,881 ft. with 8 ft. recovered of which the top 3 ft. was oil-stained lime. A core from that depth to 4,899 ft. recovered 18 ft. of lime of which 17½ ft. was oil-stained and showed fair porosity. The bottom 6 in. showed heavy saturation and good porosity. Another core was cut to 4,916 ft., however, information had not yet been released on this one at the close of the week.

Previously a drill-stem test of oil shows from 4,854-71 ft. had recovered 120 ft. of oil and gas-cut mud in 30 minutes.

Abell Field Tests Drill Deeper After Finding Simpson Dry

Defining the Abell field of northern Pecos County which produces from the Simpson section of Upper Ordovician, there were five tests drilling below the regular pay level at the close of the week. Of these five there were three which had drilled sufficiently deep to penetrate the top of the Ellenburger section underlying the Simpson.

One and a quarter miles northeast of the discovery well for the field, Magnolia 1 J. F. McKee, Section 25, Block 9, H.&G.N. Survey, drilled through the Simpson section with no shows and topped the Ellenburger lime at 5,805 ft. Drilled to 5,809 ft., it was cored from that point to 5,834 ft. with no favorable shows encountered. Casing was being reamed down at last reports.

Magnolia 2 State-Baldwin, Section 24, Block 9, H.&G.N. Survey, in the northern part of the pool, topped the Ellenburger at 6,116 ft. and had drilled to 6,135 ft. with no shows reported.

About 1½ miles northwest of the field, Magnolia 1 Gerety, Section 23, Block 9, H.&G.N. Survey, which had entered the Ellenburger at 6,088 ft., was last reported coring ahead below 6,132 ft. after recovering two cores which showed some sulfur water.

SOUTHERN WEST TEXAS WILDCAT COMPLETIONS

Crane County: Gulf 1-F State University Lands, SE SE Sec. 22, Blk. 31, University Sur., dry at 10,659 ft.

FIELD COMPLETIONS

Crockett, Crockett County: Garrett M. Smith 1-B Powell, 111 bbl. oil and 16 per cent water daily, pumping, 500 gal. acid, 2,660-61 ft.
Foster, Ector County: Forest Development 3-G Moss, 276 bbl. daily, pumping, 300-qt. shot 4,170-4,270 ft., T.D. 4,342 ft.
Hendricks, Winkler County: Standard Oil 30 Drugin (old well drilling deeper), old T.D. 2,580 ft., abandoned, lost tools.
Hutchins, Ward County: Gulf Oil 155 Hutchins, 388 bbl. daily, 1,061-qt. shot 2,520-3,065 ft., T.D. 3,075 ft.
Johnson, Ector County: Carlos Oil 2 Johnson, 368 bbl. daily, 750-qt. shot 4,108-4,200 ft., P.B. to 4,180 ft.
Continental Oil 8-B Johnson abandoned.
Sunray Oil 3-F Johnson, 656 bbl. daily, 185-qt. shot 4,065-4,140 ft.
Jordon, Ector County: Cities Service 7-B University, 495 bbl. daily, ½-in. choke, 4,000 gal. acid, 3,576-3,610 ft.
Keystone, Winkler County: Standard Oil of Texas 23-12 Beard, 848 bbl. daily, 320-qt. shot 3,235-3,370 ft., T.D. 3,401 ft.
McCamey, Upton County: Miami Oil 1 Bowen, 240 bbl. daily, pumping, 2,000 gal. acid, 2,150-2,237 ft.
Noelke, Crockett County: M. M. Production 1 Noelke, 203 bbl. in 1 hr., 1,165-76 ft.
Wilshire Oil 1 G. L. Thompson, 190 bbl. daily, natural 1,256-1,285 ft.
North Cowden, Ector County: Stanolind 2-D Midlands, 778 bbl. daily, 630-qt. shot 4,530-4,740 ft., T.D. 4,769 ft., P.B. to 4,759 ft.
Stanolind and Delaney 2-A Smith (old well drilled deeper), 335 bbl. daily, 300-qt. 4,320-75 ft., old T.D. 4,320 ft., new T.D. 4,380 ft.

The Texas 7 Holt, 335 bbl. daily, ¾-in. choke, 368-qt. shot 4,433-4,529 ft.
Shearer, Pecos County: David & White 1-J Shearer, 2 bbl. oil and 3 bbl. water daily, pumping, 100-qt. shot 1,870-1,900 ft.
Pecos Valley, Pecos County: Harris G. Eastham 3 Iowa Royalty Trust, 297 bbl. daily, 30-qt. shot 1,598-1,638 ft., T.D. 1,648 ft.
Waddell, Crane County: Gulf 23 Waddell, 3,163 bbl. daily, 4,436,000 cu. ft. gas, 5,000 gal. acid, top Ellenburger 5,552 ft., pay 5,620-52 ft.
White & Baker, Pecos County: Shasta Oil 7 White & Baker, 66 bbl. oil and 92 bbl. water daily, 95-qt. 1,926-37 ft.
Shasta Oil 8 White & Baker, 77 bbl. daily, 100-qt. shot 2,033-45 ft.

SOUTHERN WEST TEXAS ACTIVE WILDCATS

Brewster County: Chester Dewey 1 Decies, 660 ft. from N and 1,980 ft. from S lines, Sec. 45, Blk. 4, G.C.& S.F. Sur., 3,000-ft. test, rigging up rotary.
Crockett County: Bolsa Chico Oil 1 Bouscaren, 624 ft. from S and 330 ft. from E lines Sec. 57, Blk. GG, T.C.R.R. Sur.
Bolsa Chico Oil 1 Noelke, 467 ft. from N and E lines, Sec. 22, Blk. GG, G.C.&S.F. Sur., first report.
Loving County: Pinal Dome Oil 1 Michigan Oil fee, NW SW Sec. 15, Blk. 26-C, P.S.L. Sur., 5,300-ft. test, fishing 4,872 ft., last report.
Pecos County: Redmond, Greene & Davis 1 Iowa Trust, E¼ W¼ Sec. 29, Blk. 10, H.&G.N. Sur., Ordovician test, 9⅝-in. 1,885 ft.
Anderson-Prichard 1 Boren, 1,979 ft. from S and 660 ft. from E lines Sec. 4, L. Merchant Sur., location.
Cremin & Boren 1 Bowen, 2,310 ft. from NW and 1,650 ft. from NE lines Sec. 60, Blk. 10, H.&G.N. Sur., 2,100-ft. test, location.
Phillips 2 Nutt, 1,980 ft. from W and S lines Sec. 17, Blk. 125, T.&St.L. Sur., 2,500-ft. test, location.
Reagan County: Amerada 1-RA University, Sec. 3, Blk. 48, University Lands Sur., drilling 6,895 ft.
Upton County: Plymouth Oil 1 Alford, C Sec. 50, Blk. 12, P.B. Scott Sur., Ordovician test, 16-in. 310 ft., drilling below 2,900 ft.
Mesquite Oil 1 Cross, Sec. 34, C.&M. Sur., T.D. 1,375 ft., last report.
Ward County: Stanolind 1 Spencer-Evans, 476 ft. from NW and 2,173 ft. from SW, Sec. 53, Blk. 34, H.& T.C. Sur., 3,500-ft. test, location.
J. E. Fitzpatrick 1 Pruitt, 467 ft. out of S cor. Sec. 21, Blk. 1, W.&N.W. Sur., drilling 930 ft.
Winkler County: Magnolia 20 States-Walton, NW cor. Sec. 4, Blk. 3-B, P.S.L. Sur., coring below 4,916 ft.
Sam Weiner 2 Halley, NW NE Sec. 7, Blk. 11-B, P.S.L. Sur., drilling 3,410 ft.

SOUTHEAST NEW MEXICO COMPLETIONS

Leonard, Eddy County: H. Aid 2 Leonard-State, NW NW 16-17-29, 8 bbl. at 3,080 ft.
Wildcat, Lea County: Skelly 1 Johnson, SW NW 20-23-27, 29 bbl. at 3,669 ft., *2 mi. SW of Skelly pool, and about the same distance from the Lynn and Mattix pools.*

Wildcat Drilling Report

Chaves County: Elliott 1 State, NW NE 16-11-31, pulled 7-in., S.D. 3,915 ft.
Martin 1 Stephens, NW NE 22-15-29, drilling 3,505 ft.
Montgomery 1 Purcell, SW NW 13-11-26, drilling 2,150 ft.
Eddy County: H. Aid 1 Wentz, SW SE 24-17-28, drilling 2,330 ft.
Bedingfield & Walker 1 Seale, SE SE SE 10-20-27, S.D. 1,717 ft.
Gearner 1 Friess, SE NW 9-21-29, S.D. 510 ft.
Lea County: Fullerton 1 State, NE SE 18-16-33, drilling 3,050 ft.
Helmerich & Payne 1 Phillips-State, NW SW 3-14-38, drilling 5,433 ft.
Leonard & Welch 1 State, NW NW 18-20-33, drilling 1,735 ft.
Westall 1 State, NW NW 36-17-32, S.D. 4,425 ft.

Southwest Texas Fields

(Continued from Page 76)

Southern Minerals 10 Walker, 81 bbl., 7/64-in. choke, perf. casing 5,637-42 ft., T.D. 5,646 ft.
St. Charles, Aransas County: Continental 3 St. Charles, 153 bbl., ⅞-in. choke, perf. casing 9,306-22 ft., T.D. 11,474 ft.
Sandia, Jim Wells County: O. W. Killam 17 Wade, dry, T.D. 5,250 ft.
South Clara Driscoll, Nueces County: Magnolia 9 Johnson, hole caved, abandoned, T.D. 840 ft.
Tom O'Connor, Refugio County: Quintana 28-A Williams., 694 bbl., ¼-in. choke, perf. casing 5,862-76 ft., T.D. 5,921 ft.
Victoria, Victoria County: Ownby Drilling Co. 1 South Texas Cotton Oil Co., 100 bbl., ⅞-in. choke, sand 4,757-73 ft.
Wade City, Jim Wells County: Roy E. Wolfe 1 Welhausen, 110 bbl., ⅛-in. choke, perf. casing 4,942-25 ft., T.D. 4,926 ft.

SOUTH TEXAS WILDCATS

Webb County: Harold Boysen 1 Bruni, dry, T.D. 3,013 ft.
Zapata County: W. H. Holland 1 Garza, dry, T.D. 1,824 ft.
J. P. Martin 3 Vela, dry, T.D. 3,119 ft.

FIELDS

Boyle, Starr County: Fidelity Oil & Royalty Co. 8-D Carruth, gas well, perf. casing 3,380-85 ft., T.D. 4,131 ft.
Bridwell, Duval County: Forest Development Corp. 5 Rogers, 48 bbl., 9/64-in. choke, perf. casing 4,339-43 ft., T.D. 4,345 ft.
Chaparosa, Jim Hogg County: Adams, Lucky and Neuhaus, dry gas, perf. casing 2,786-91 ft., T.D. 3,070 ft.
Charamousca, Duval County: N. V. Duncan 1-A Worden & Drought, 38 bbl., pumping, sand 1,544-53 ft.
Colmena, Duval County: Colmena Oil Co. 2 Saenz, dry, T.D. 1,988 ft.
Colorado, Jim Hogg County: Humble 18-B King, 114 bbl., ⅛-in. choke, T.D. 2,937 ft.
Glen, Webb County: Interstate Minerals 61 Lopez, gas well, sand 2,130-45 ft.
Killam, Webb County: O. W. Killam 8 Garcia-Villareal, 53 bbl., pumping, T.D. 2,060 ft.
North Rincon, Starr County: Sun 3 Coates, 23 bbl., pumping, perf. casing 4,394-4,405 ft., T.D. 5,704 ft.
Sun 4 Coates, 139 bbl., ⅞-in. choke, perf. casing 4,396-4,403 ft., T.D. 4,431 ft.
Rincon, Starr County: Continental 29-A Slick, 2 bbl., ⅞-in. choke, T.D. 4,340 ft.
Continental 38-A Slick, 174 bbl., ⅞-in. choke, perf. casing 3,744-60 ft., T.D. 4,200 ft.
Sam Fordyce, Starr County: Phillips 3 Elizondo, 97 bbl., 3/32-in. choke, perf. casing 3,457-62 ft., T.D. 3,512 ft.
Sun, Starr County: Humble 5 Montalvo, 125 bbl., ⅛-in. choke, T.D. 4,866 ft.
Sun 7-B Speer, 223 bbl., ⅞-in. choke, perf. casing 4,618-21 ft., T.D. 4,926 ft.
White Creek, Live Oak County: Henderson Coquat 4 Goad, dry, T.D. 1,894 ft.

SOUTH CENTRAL TEXAS WILDCATS

Medina County: J. W. Duncan 1 Haby, dry, T.D. 1,653 ft.
Wilson County: Texminn Oil Co. 1 J. H. McDaniel, dry, T.D. 3,138 ft.

FIELDS

Gas Ridge, Bexar County: H. J. Bussa, 1 bbl., pumping, T.D. 630 ft., P.B. T.D. 410 ft.
Somerset, Bexar County: Harry Mussey 1 Miller, 2 bbl., pumping, sand 1,280-1,316 ft., T.D. 1,354 ft.

SOUTHWEST TEXAS DRILLING REPORT

Duval County: J. W. Owens 1 Carrillo, 7½ miles northeast of Benavides, J. S Givens Sur., drilling shale 2,982 ft.
Hidalgo County: W. R. Davis Co., Inc., 1 Arizona-Texas Citrus Co., McAllen area, drilling sandy shale 7,000 ft.
Jim Hogg County: Plymouth 1 O. F. Sweeney, Las Animas grant, drilling sandy shale 4,210 ft.
Sun 5 East, J. H. Shaprt, Sur. 793, drilling shale 4,548 ft.
La Salle County: Quintana Petroleum Corp. 3 Washburn, L. W. Earnest Sur., drilling below 9,400 ft. (tight well).
Nueces County: Brown & Wheeler 1 Z. A. Booth, 6 mi. SW of Luby, drilling shale 6,405 ft.
Seaboard 9 Chapman, 9,000 ft. W of Chapman Ranch field, Sec. 45, Laureles Farm Tracts, drilling shale 1,520 ft.
San Patricio County: F. A. Gillespie & Sons 1 M. K. Hunt, 2 mi. NE of Gregory, Blk. A, Geronimo Valdez Sur., drilling shale 5,340 ft.
Wellington Oil Co. 1-C Welder, 2 mi. W of Angelita, Odem area, perf. casing 6,715-20 ft., flowed distillate, killed, squeezed perforations, prepare to retest.
Starr County: Sun 1 Magee, Sur. 99, drilling shale 1,050 ft.
Webb County: Magnolia 1-A Hamilton Ranch, drilling shale 8,628 ft.

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Irvington Outpost Opens New Area to Development

By STAFF CORRESPONDENT

MATTOON, Ill., June 16.—Wildcat operators in Illinois opened five new pools during May, an average of more than one a week. The new pools were opened by Cherry & Kidd 1 Henry Karsh, Aux Vases sand producer 3 miles south of Maunie in White County; Carl Robinson 1 Tolliver, Tar Springs sand producer in northern Clay County; Chet Evarts 1 J. C. Catt, Biehl sand producer in southern Lawrence County; Osborn 1 Bowers, Richland County; and R. B. Martin et al 1 Lester, McClosky producer in Edwards County. The Benton pool of Franklin County proved to be the most active pool during the month with a total of 84 producing wells and more than 40 wells drilling by June 1.

SUMMARY OF COMPLETIONS

	No.	Bbl.	Footage
Oil wells: Benton	15	4,159	32,182
Dahlgren	3	1,574	9,898
East Calvin	8	635	22,419
East Patoka	3	788	4,301
Louden	3	305	4,713
Mount Carmel	3	509	6,764
North Enterprise	4	1,153	12,214
North New Harmony	6	1,030	16,363
West Irons	3	303	7,857
Other pools	11	3,301	25,598
Wildcats	4	1,000	10,635
Dry holes: Fields*	6	.....	14,765
Wildcats	8	.....	18,539
Total	77	.....	186,248
Input wells	1	.....	1,585
Recompletions	11	1,875	.....

*Dahlgren 1, Dale 1, Allendale 1, Hoodville 1, Raymond 1, West Liberty 1.

Probably the most important development in Illinois during the past week was the completion of a north outpost to Washington County's Irvington field as a better than 200-bbl. producer. The test, Powell-Risk 1 Holle, NW NW NE 15-1s-1w, pumped 40 bbl. the first 2 hours on pump. However, the hole was full of water when the pumping began and it was believed that the well would produce 10 bbl. an hour consistently after the level of the fluid in the hole had been reduced. No. 1 Holle, producing naturally from the Benoist sand at 1,521-27 ft., is the first well completed in the area north of the field, an area previously condemned.

Another important Washington County wildcat, Smith Petroleum 1 Mittendorf, SW SW SE 8-2s-4w, was dry and abandoned last week at a total depth of 2,450 ft. in the Devonian. The Devonian formation was topped at 2,372 ft. No. 1 Mittendorf was located in an area which has no production at the present time.

Devonian Shows Water In Patoka Test

Hopes for a Devonian development program in the Patoka field of Marion County waned last week when Adams Oil & Gas 22 Merryman heirs, Devonian test in the Patoka field, reported that a core removed from a total depth of 2,940 ft. carried salt water. On a 30-minute drill-stem test at 2,940 ft. with packer set at 2,932 ft., there was only a slight show of oil and 1,700 ft. of salt water. At the end of the week 22 Merryman heirs was drilling at 3,065 ft. with a stain at 2,970 ft. reported as the only show found since the drill-stem test. Operators plan to drill a few feet further and then run an electrical log. The test is in SE SW 21-4n-1e, 50 ft. from the pool's discovery well. 1 Merryman heirs.

LOUDEN FIELD.—Most of the Devonian activity in the Louden field of Fayette County at the present time is centered about offset wells to the first Devonian producers. Although several new locations have been staked, little interest has been shown toward the extension of Devonian production to the south. This lack of interest is attributed to the apparent failure to find commercial production in that level at Jarvis Bros. 1-D Yakey, E½ SW NE 6-7n-3e. Unconfirmed reports stated that 1-D Yakey produced approximately 1,000 bbl. of water and no oil during a test in the early part of last week, and that operators had plugged back to test a show of oil in the Rosiclare. However, operators have received drilling permits for two additional Devonian tests on the Yakey lease.

Meanwhile, the Louden field has been given an approximate ½-mile northern extension in the shallow pay at Luttrell 1 Buzzard, NE SE 34-9n-3e, which is nearing successful completion in the Weiler sand. The test has not been given a production test but is classed as a commercial producer and is expected to stimulate activity in that area since a large part of the acreage is held by independents.

McClosky Pool Assured In Gallatin County

A new pool was definitely assured in Gallatin County last week when Blackstock et al 1 Cox, NE NW SW 2-8s-9e, swabbed from 10 to 15 bbl. of oil and no water an hour from the McClosky. The well has been shut in until tanks can be erected and will probably be acidized before completion. Hole is bottomed at 3,020 ft., through 14 ft. of McClosky pay.

The new discovery is about 4 miles northeast of Colbeck 1 Egyptian Tie & Timber, a small McClosky producer. Other production in Gallatin County at present is from the Palestine sand in the Omaha pool and from the Tar Springs in the Inman pool.

WILDCAT COMPLETIONS

Bond County: Regent Oil 1 Wafer, N½ SE NW 36-7n-4w, dry at 847 ft., junked hole.

Effingham County: Lynch & Jansen 1 Burk, W½ SE NW 27-6n-5e, pumped 175 bbl. oil and 5 bbl. water, Benoist 2,274 ft., pay 2,276-98 ft., T.D. 2,298 ft. *Discovery well of Benoist production in Mason pool.*

Crawford County: Fuller 1 Barnes, NW NE SW 7-5n-11w, dry, old well deepened from 1,900-2,450 ft.

Franklin County: E. S. Adkins 1 Old Ben Coal-F, NE NW SE 36-7s-2e, dry at 3,053 ft., P.B. 2,982 ft.

Iroquois County: H. C. Detrich 1 Krable, NE NE 19-26n-12w, abandoned location.

Jackson County: Wiser Oil 1 Overholt, SE SW 22-7s-1w, pumped 5 bbl. oil and 1 bbl. water, 15-qt. shot 2,000-11 ft., Benoist 2,000-11 ft., T.D. 2,387 ft., P.B. 2,025 ft. *Pool opener.*

Saline County: J. H. Williams 1 McCarty, SE NE NW 25-9s-6e, dry at 2,645 ft., Benoist 2,325 ft., Renault 2,385 ft., Aux Vases 2,417 ft., Ste. Genevieve 2,462 ft., Fredonia 2,551 ft., St. Louis 2,640 ft.

Shelby County: Sloan 1 Powers, SE SE SE 1-10n-2e, dry at 1,875 ft., base Pennsylvanian 1,345 ft., Tar Springs 1,360 ft., Glen Dean 1,410 ft., Cypress 1,537 ft., Benoist 1,718 ft., Fredonia 1,840 ft.

Vermilion County: Sylvester 1 Trisler NE NE SE 30-18n-13w, dry at 1,775 ft., Devonian 1,428 ft.

Wabash County: Heyle-Troupe 2 Dager, NW NE SW 31-2n-11w, dry at 2,175 ft., Menard 1,427 ft., Vienna 1,532 ft., Glen Dean 1,640 ft., Barlow 1,810 ft., Ste. Genevieve 2,040 ft., T.D. 2,175 ft.

Mabee 1 Brines, NW SW NW 9-1s-13w, dry at 2,840 ft., Paint Creek 2,550 ft., Benoist 2,578 ft., Renault 2,638 ft., Ste. Genevieve 2,708 ft.

White County: Compton & Fotiades 1 Gray, NE SW SW 21-4s-14w, flowed 800 bbl., 100-qt. shot 2,830-57 ft., Aux Vases 2,838 ft., T.D. 2,862 ft. *Will probably link East Calvin and North New Harmony fields.*

C. D. Neff 1 Green, S½ SE SW 8-4s-10e, dry at 3,329 ft.

Continental 1 Ackerman, NE NW NE 25-5s-10e, pumped 20 bbl. oil and 1 bbl. water, 8-qt. shot 2,815-42 ft., Benoist 2,824 ft., T.D. 3,097 ft., P.B. 2,957 ft. *Pool opener.*

FIELD COMPLETIONS

Clay County

Iola: Madden 2 Ging, NW SE NE 17-5n-5e, pumped 15 bbl. oil and 45 bbl. water, 40-qt. shot 2,375-88 ft., Aux Vases 2,369 ft., T.D. 2,389 ft.

Fayette County

Louden: Carter 2-2 Beck-Dial, SE SE SW 35-9n-3e, input well, 10-qt. shot 1,574-77 ft., perf. 1,501-33 ft., Glen Dean 1,339 ft., Cypress sand 1,504 ft., Paint Creek sand 1,572-85 ft.

Carter 4 W. D. Miller, SE SW SE 1-8n-3e, swabbed 168 bbl., 30-qt. shot 1,473-83 ft., 30-qt. shot 1,461-71 ft., Cypress sand 1,454-80 ft., T.D. 1,484 ft.

Carter 2 Holman, NE SE SE 3-8n-3e, swabbed 96 bbl., 10-qt. shot 1,597-1,600 ft., Benoist 1,590-95 ft., T.D. 1,608 ft.

Carter 2 A. Claw, W½ SW NE 15-8n-3e, flowed 672 bbl., 40-qt. shot 1,408-24 ft. in Cypress sand, old well worked over, T.D. 1,502 ft.

St. James: P. Doran 2 Kistler, NE NW SW 36-6n-2e, pumped 41 bbl. oil and 19 bbl. water in 20 hr., 10-qt. shot 1,613-20 ft., Cypress sand 1,611-21 ft., T.D. 1,621 ft.

Franklin County

Benton: Menhall 3 Stalkup, NW SE SE 23-6s-2e, pumped 480 bbl., 20-qt. shot 2,104-14 ft., Tar Springs 2,087 ft., T.D. 2,114 ft.

Shell 7 C. W. & F. Coal, SW SE NW 24-6s-2e, pumped 170 bbl., 15-qt. shot 2,122-32 ft., Tar Springs sand 2,102-39 ft., T.D. 2,139 ft.

Wegener 1 C. W. & F. Coal "R", SW SW SW 24-6s-2e, pumped 403 bbl., 40-qt. shot 2,090-13 ft., Tar Springs 2,072 ft., T.D. 2,113 ft.

Adkins 2 Chenault, NW NE SE 25-6s-2e, pumped 254 bbl., 20-qt. shot 2,121-31 ft., Tar Springs 2,111 ft., T.D. 2,131 ft.

Frazier 1 C. W. & F. Coal "Q," NF NE SW 25-6s-2e, pumped 272 bbl., 30-qt. shot 2,123-56 ft., Tar Springs sand 2,123 ft., T.D. 2,156 ft.

Wegener 1 C. W. & F. Coal "S-M," SE SW SW 25-6s-2e, pumped 385 bbl., 30-qt. shot 2,137-67 ft., Tar Springs 2,123 ft., T.D. 2,167 ft.

Wegener 2 C. W. & F. Coal "S-M," NE SW SW 25-6s-2e, pumped 415 bbl., 40-qt. shot 2,132-62 ft., Tar Springs 2,121 ft., T.D. 2,164 ft.

Adkins 1 Orient "R," SW SE NE 26-6s-2e, pumped 64 bbl., 5-qt. shot 2,154-57 ft., Tar Springs 2,148 ft., T.D. 2,161 ft., P.B. 2,157 ft.

Manley 2 Loger, N½ NE NE SE 26-6s-2e, pumped 125 bbl., 12-qt. shot 2,118-23 ft., Tar Springs 2,106 ft., T.D. 2,123 ft.

Adkins 2 Orient "M," SE NE NE 36-6s-2e, pumped 170 bbl., 20-qt. shot 2,130-45 ft., Tar Springs 2,123 ft., T.D. 2,146 ft.

Shell 4 C. W. & F. Coal "R-S," N½ NE SE NW 36-6s-2e, pumped 279 bbl., 30-qt. shot 2,146-68 ft., Tar Springs sand 2,116 ft., T.D. 2,172 ft.

Shell 7 C. W. & F. "R-S," NW SE NW 36-6s-2e, pumped 238 bbl. in 19 hr., 30-qt. shot 2,149-71 ft., Tar Springs sand 2,119 ft., T.D. 2,176 ft.

Shell 2 C. W. & F. "T," NW SW NE 36-6s-2e, pumped and swabbed 242 bbl. in 18 hr., 30-qt. shot 2,134-56 ft., Tar Springs sand 2,102-58 ft., T.D. 2,158 ft.

Shell 3 C. W. & F. "T," SE SW NE 36-6s-2e, swabbed 252 bbl. in 19 hr., 30-qt. shot 2,110-32 ft., Tar Springs sand 2,077-2,103 ft., 2,105-36 ft., T.D. 2,136 ft.

Pruitt 1 J. P. Minier, SW SW SW 30-6s-3e, pumped 410 bbl., 40-qt. shot 2,116-26 ft., Tar Springs 2,086 ft., T.D. 2,126 ft.

Shell 1 C. W. & F. "O," SE NW NW 25-6s-2e, location abandoned. Menhall obtained and is drilling this lease.

Hamilton County

Dale: Pure 4 E. Cuppy, SE NE NW 7-6s-7e, pumped 306 bbl. oil and 116 bbl. water from Aux Vases and Cypress sand, old T.D. 2,983 ft., old P.B. 2,927 ft., cleaned out to 2,983 ft.

Cameron Bros. 1 Mayberry, NW SW SE 7-6s-7e, flowed 699 bbl., Aux Vases 2,982-94 ft., 2,998-3,010 ft., T.D. 3,010 ft.

Kingwood-Sinclair 1 Smith, SW NW NW 31-5s-7e, dry at 3,216 ft.

Hoodville: Texas 1 F. Pittman, SE NW NW 3-6s-6e, dry at 3,220 ft., Aux Vases 3,069-74 ft., McClosky 3,205-12 ft.

Dahlgren: Ohio 1 M. Trotter, S½ NW SW 27-3s-5e, flowed 519 bbl., 5,000 gal. acid, Ste. Genevieve 3,184 ft., T.D. 3,312 ft.

Sinclair 6 Hall, NW SW SE 27-3s-5e, pumped 725 bbl., 7,000 gal. acid, McClosky 3,282-92 ft., T.D. 3,296 ft.

Sinclair 7 Hall, N½ SE SW 27-3s-5e, swabbed 306 bbl., 5,000 gal. acid, McClosky 3,278-80 ft., 3,282-90 ft., T.D. 3,290 ft.

D-P Oil 1 Miller, S½ SW NE 33-3s-5e, dry at 3,385 ft., Cypress sand 2,910-18 ft., Aux Vases 3,182 ft., Aux Vases sand 3,194 ft., McClosky 3,339-48 ft.

Jasper County

West Liberty: Pure 1 L. C. Canny, W½ NE SE 17-5n-10e, flowed 130 bbl., 5,000 gal. acid, McClosky 2,780-83 ft., T.D. 2,825 ft.

Pure 1 M. Keavin, S½ NW NW 8-5n-10e, dry at 2,866 ft., Glen Dean 2,293 ft., Barlow 2,452 ft., Cypress 2,470 ft., Ste. Genevieve 2,774 ft., Rosiclare 2,800 ft., Trenton 2,817 ft.

Pure 1 H. Wantsbaugh, E½ SE SE 5-5n-10e, flowed 109 bbl., 5,000 gal. acid, McClosky 2,770-76 ft., 2,788-90 ft., T.D. 2,797 ft.

Marion County

Patoka: Adams O. & G. 6 Pugh, SW SE NE 29-4n-1e, pumped 74 bbl., 40-qt. shot 1,417-41 ft., Benoist 1,407 ft., T.D. 1,445 ft.

East Patoka: Shell 8 Davidson, SE SE NE 34-4n-1e, pumped 344 bbl. oil and 3 bbl. water, 6-qt. shot 1,342-47 ft., Cypress sand 1,332-67 ft., T.D. 1,367 ft.

Shell 1 S. A. Clark-A, NW NE SE 34-4n-1e, pumped 425 bbl., 15-qt. shot 1,535-63 ft., T.D. 1,565 ft.

Magnolia 2 Peddicord, NW NW SE 34-4n-1e, pumped 19 bbl., 30-qt. shot 1,365½-67 ft., 5-qt. shot 1,365½-67 ft., Cypress sand 1,361 ft., T.D. 1,369 ft.

Salem: Texas 19 R. Shanafelt, SE NE NE 29-2n-2e, pumped 68 bbl., natural, Trenton 4,527 ft., old well deepened to 4,640 ft.

Ohio 38 M. Young heirs, SE SE NW 29-2n-2e, pumped 59 bbl., 5,000 gal. acid, Trenton 4,514 ft., old well deepened to 4,618 ft.

McBride 19 Lee, NE NE SE 29-2n-2e, pumped 105 bbl., 20-qt. shot 4,588-4,602 ft., Trenton 4,490 ft., old well deepened to 4,619 ft.

Magnolia 24 J. R. Young, NW SW NE 29-2n-2e, pumped 56 bbl., 190-qt. shot 4,540-4,625 ft., Trenton 4,502 ft., old well deepened to 4,625 ft.

Magnolia 84 J. H. Young, S½ NW SW NW 28 2n-2e, flowed 125 bbl., 210-qt. shot 4,565-4,658 ft., Trenton 4,532 ft., old well deepened to 4,658 ft.

Montgomery County

Raymond: Dortonedge 1 Eglehoff, SW SW SW 19-10n-4w, dry at 628 ft., 20-qt. shot on bottom, slight show oil and water, sand 621-28 ft.

Richland County

Dundas: Pure 2 Whetstone, E½ SE NE 30-5n-10e,

flowed 1,465 bbl., 5,000 gal. acid, McClosky 2,827-35 ft., 2,851-55 ft., T.D. 2,880 ft.

Noble: Pure 10 John Coen, N½ SW NE NW 9-3n-9e, pumped 313 bbl. oil and 46 bbl. water, perf. 2,590-94 ft. in Cypress, old well P.B. from 3,000-2,612 ft., was dry and abandoned.

St. Clair County

Dupo: C. B. Richardson 2 Kastner, NW SE NW 21-1n-10w, pumped 4 bbl. oil and 2 bbl. water, 2,000 gal. acid, 20-qt. shot 520-33 ft., Trenton 502 ft., T.D. 533 ft.

Wabash County

Allendale: Smith et al 1 fee, S½ SW NW 36-2n-12w, dry at 1,450 ft.

Mount Carmel: Pumped 200 bbl. in 12 hr., 20-qt. shot 2,053-58 ft., Cypress sand 2,044-67 ft., T.D. 2,425 ft., P.B. 2,060 ft.

Shell 4 Heln, SE NE SE 18-1s-12w, pumped 139 bbl., 10-qt. shot 2,050-57 ft., Cypress sand 2,042 ft., T.D. 2,057 ft.

Lacy 1 Sturman, SE SW NW 21-1s-12w, pumped 170 bbl. oil and 20 bbl. water, McClosky 2,344-50 ft., 2,369-81 ft., T.D. 2,382 ft.

Marble 1 Tartee, NE SW NW 21-1s-12w, location abandoned.

South Griffin: Longhorn 13 Helm, N½ NE SE 23-3s-14w, flowed 300 bbl., perf. 2,487-2,502 ft., Aux Vases 2,706 ft., T.D. 2,785 ft.

Washington County

Irvington: Kingwood 5 Brink, SE NE SE 15-1s-1w, pumped 150 bbl. oil and 96 bbl. water, 3-qt. shot 1,522-24 ft., 6-qt. shot 1,520-24 ft., Benoist 1,514 ft., T.D. 1,526 ft.

Wayne County

North Enterprise: Pure 4 M. Rogers, SE SW NE 30-2n-8e, pumped 90 bbl. oil and 70 bbl. water, 5,000 gal. acid, Fredonia 3,031 ft., T.D. 3,095 ft.

Sanders et al 2 Hubble, S½ NW SW SE 30-2n-8e, pumped 350 bbl., 5,000 gal. acid, Fredonia 3,028 ft., pay 3,034-41 ft., T.D. 3,057 ft.

Pure 1 Hosselton-B, NW SW NW NE 31-2n-8e, flowed 463 bbl., 5,000 gal. acid, Fredonia 3,005 ft., pay 3,008-12 ft., T.D. 3,035 ft.

Sanders 7 L. Hubble, NW NW NE 31-2n-8e, flowed 250 bbl., 5,000 gal. acid, McClosky 3,002-09 ft., 3,018-26 ft., T.D. 3,027 ft.

West Enterprise: Pure 1 Ulm, W½ NW SE 36-2n-7e, pumped 88 bbl., perf. 2,904-22 ft., old well worked over, T.D. 3,090 ft.

Pure 1 Garrison Consol., SE NE NW 36-2n-7e, pumped 83 bbl. oil and 2 bbl. water, perf. 2,904-15 ft. in Aux Vases, old well worked over, T.D. 3,070 ft.

White County

West Irons: Carter 2 Bolerjack, SE SE NE 23-6s-8e, pumped 102 bbl. oil and 70 bbl. water; 10-qt. shot 2,401-05 ft., Tar Springs 2,400-14 ft., T.D. 2,560 ft.

Carter 3 Bolerjack, NW SE NE 23-6s-8e, pumped 176 bbl. oil and 20 bbl. water, perf. 2,365-75 ft., 20-qt. shot 2,524-30 ft., Tar Springs 2,370-94 ft., T.D. 2,533 ft.

Tide Water 2 Widick, NW NW SE 23-6s-8e, pumped 25 bbl., 15-qt. shot 2,754-60 ft., Cypress sand 2,793-44 ft., 2,752-59 ft., T.D. 2,764 ft.

East Calvin: First Nat. Pet. Trust Co. 3 Bump, SW SE NW 33-3s-14w, pumped 60 bbl., 70-qt. shot 2,783-2,818 ft., 240-qt. shot 2,783-2,818 ft., Aux Vases sand 2,778 ft., T.D. 2,818 ft.

First Nat. Pet. Trust Co. 4 Bump, SE SW NW 33-3s-14w, pumped 87 bbl., 80-qt. shot 2,842-74 ft., 400-qt. shot 2,856-74 ft., Aux Vases 2,838-56 ft., T.D. 2,874 ft.

Arrow Drlg. 2 Hon-A, NE NE NE 5-4s-14w, pumped 165 bbl., perf. 2,872-78 ft., 2,919-32 ft., 5,000 gal. acid, Ste. Genevieve 2,842 ft., T.D. 2,948 ft.

Buell & Herndon 12 J. Bond, SW SE 5-4s-14w, pumped 10 bbl., Aux Vases 2,815-45 ft., T.D. 2,845 ft.

Hal. Compton 5 Calvin, NW NE SE 8-4s-14w, pumped 100 bbl., 80-qt. shot 2,817-27 ft., 240-qt. shot 2,817-30 ft., Aux Vases 2,797-2,828 ft., T.D. 2,842 ft.

Delta Drlg. 9 Boltinghouse, N½ SW SW NW 16-4s-14w, flowed 68 bbl., 70-qt. shot 2,833-62 ft., Aux Vases 2,828-60 ft., T.D. 2,973 ft., P.B. 2,863 ft.

W. W. Gray 11 fee, NE SE NE 20-4s-14w, pumped 35 bbl., 30-qt. shot 2,830-42 ft., Aux Vases 2,828 ft., T.D. 2,972 ft.

Paul Miller 3-B-1 Ford heirs, NW NW NW 21-4s-14w, pumped 110 bbl., 50-qt. shot 2,135-42 ft., Tar Springs 2,124-47 ft., T.D. 2,147 ft.

North New Harmony: Tide Water 19 Dennis, SW SE SW 28-4s-14w, pumped 70 bbl., 50-qt. shot 2,719-39 ft., Benoist 2,698-2,736 ft., 2,688-95 ft., T.D. 2,736 ft.

Sun 21 Greathouse, NW NW SW 33-4s-14w, pumped 80 bbl. oil and 120 bbl. water, 80-qt. shot 2,706-25 ft., Benoist sand 2,703-25 ft., T.D. 2,725 ft.

Superior 17 H. M. Ford, N½ NW SE 28-4s-14w, pumped 300 bbl., 200-qt. shot 2,681-2,725 ft., perf. 2,570-2,605 ft., Cypress sand 2,572-2,612 ft., Benoist 2,675-2,725 ft., T.D. 2,725 ft.

Sun and Ellis 7 Jacobs-A, S½ SE NE 28-4s-14w, pumped 120 bbl., 30-qt. shot 2,585-97 ft., Cypress sand 2,579-95 ft., T.D. 2,597 ft.

Sun and Ellis 5 Jacobs-A, SE SE NW 28-4s-14w, flowed 300 bbl., 80-qt. shot 2,836-50 ft., pay 2,830-50 ft., Aux Vases 2,782 ft., T.D. 2,850 ft.

Sun and Ellis 4 Jacobs-A, SE NE NE 28-4s-14w, pumped 160 bbl., 50-qt. shot 2,710-29 ft., 290-qt. shot 2,710-30 ft., Benoist 2,708-29 ft., T.D. 2,730 ft.

Roland: Fisher et al 2 Ellis, NW SW SE 11-7s-8e, swabbed 320 bbl., natural, Waltersburg sand 2,143 ft., T.D. 2,157 ft.

Springerton: First Nat. Pet. Trust 3 McIntosh, SW SE SW 31-3s-8e, pumped 35 bbl. oil and 30 bbl. water, 50-qt. shot 3,228-51 ft., Aux Vases 3,218-51 ft., T.D. 3,251 ft.

South Griffin: Wabash O. & G. 1-A Reeves heirs, NW NW SE 28-3s-14w, location abandoned.

ILLINOIS DRILLING REPORT

Bond County: Bragassia 1 DeMonlin, SW SE NW 34-7n-2w, first report, drilling 450 ft.

Schwarz 1 Studebaker, SE SE SW 21-6n-2w, St. Louis 1,150 ft., Salem 1,394 ft., drilling 1,621 ft.

Champaign County: Union Prod. Pet. 1 James, SE SW SE 18-20n-10e, first report, drilling 350 ft.

Christian County: O. A. Reed 1 Goodrich, SE SW SE 36-16n-2w, first report, 12-in. 60 ft., waiting on cement.

W. Marlowe 1 Howell, SE SE NE 26-15n-2w, drilling 1,200 ft.

Clinton County: J. R. Kerwin et al M. Glaser, E½ SW SE SW 2-1n-3w, T.D. 78 ft., moving in rotary tools.

Edgar County: E. Zink 1 Kirkham, SW NW SE 14-12n-14w, T.D. 355 ft., putting on pump.

Zink et al 1 Hunt, NE NE NE 14-12n-14w, show oil and gas 297 ft., S.D. 300 ft.

Monarch Oil 1 Pinnell, SE SE SW 14-12n-14w, S.D. 400 ft.

Edwards County: Nat. Pet. et al 1 Crackle heirs, NW NW SW 5-2s-14w, Menard 2,205 ft., Waltersburg sand 2,295 ft., Tar Springs 2,365 ft., Glen Dean 2,465 ft., drilling 2,565 ft.

Fayette County: Bremo Dev. 1 Mahan, SE SW NW 3-5n-3e, Menard 1,315 ft., Waltersburg 1,330 ft., Vienna 1,365 ft., Tar Springs, 1,375 ft., drilling 1,475 ft.

H. R. Spires 1 Braasch, NE NE SW 1-5n-2e, drilling 360 ft.

Franklin County: Bay Oil 1 Johnson, SE SW SE 17-6s-3e, drilling 2,070 ft.

Nation Oil 1 Beattie, NE SE NW 23-6s-2e, Tar Springs 2,176 ft., S.D. 2,192 ft.

Gallatin County: Blackstock 1 Cox, NE NW SW 2-8s-9e, Aux Vases 2,770 ft., drilling plug and putting on pump.

Ryan et al 1 Crunk, N½ NE NW SE 9-8s-9e, drilling 2,690 ft.

Hamilton County: J. A. Barbee 1 M. Hall, SE NW SW 19-4s-5e, rig, first report.

Texas 1 C. Johnson, W½ NE NE 34-6s-6e, location, first report.

J. Chevigny 1 H. H. Phillips, SW NW SW 26-6s-6e, Renault 2,981 ft., Aux Vases 3,053-64 ft., Ste. Genevieve 3,102 ft., Rosiclare 3,142 ft., Fredonia 3,163 ft., McClosky 3,171 ft., T.D. 3,190 ft., 5-in. 3,170 ft., waiting on cement.

Ryan Oil 1 Hunt, SE SE NE 28-6s-7e, T.D. 3,180 ft., P.B. to drill around fish.

Jackson County: Barton & Shipman 1 P. Maharry, NE NE SE 20-9s-3w, drilling 1,745 ft.

Jasper County: C. L. Erbin 1 H. Garner, SW NW SE 16-6n-8e, drilling 310 ft.

Johnson County: Harding & Harlow 1 Roy McCuan, NE NW NE 26-11s-3e, drilling 609 ft.

Lawrence County: W. Payne 1 H. Payne, NW SW NW 20-3n-11w, McClosky 1,823-30 ft., slight show oil, drilling 1,835 ft.

Madison County: Alch & Carroll 1 Rinkel, SE NE NW 33-5n-6w, drilling 1,415 ft.

F. C. Kiskadden 1 G. A. Fischer, S½ SE SW NE 27-5n-8w, drilling 1,197 ft.

McDonough County: C. H. Harrison et al 1 G. Bowman, SW SW NW 19-4n-4w, drilling 790 ft.

Marion County: Evans 1 Allison, NE SE SE 33-4n-1e, first report, rigging up standard tools.

Austin Oil 1 Smith, SE SE SW 12-3n-2e, Waltersburg 1,646 ft., Vienna 1,728 ft., Tar Springs 1,748 ft., Glen Dean 1,844 ft., Hardinsburg 1,862 ft., Golconda 1,905 ft., Cypress 2,019 ft., Paint Creek 2,214 ft., Benoist 2,177 ft., Renault 2,233 ft., Aux Vases 2,259 ft., Ste. Genevieve 2,310 ft., Rosiclare 2,324 ft., Fredonia 2,363 ft., T.D. 2,508 ft., casing

(Continued on Page 88)

WE PULLED NO PUNCHES IN PERFECTING *Groove Seals*

So—for taking on one tough pumping job after another—you can't buy finer insert volume pumps than those in the economically-priced Flupaco "Groove Seal" line!

In making these pumps, Fluid Packed employs the most modern methods and equipment devised for oil well pump manufacture—developed by Flupaco, for Flupaco Pumps exclusively. As a matter of fact, the developments recently pioneered by Flupaco for making the outstanding new "Improved Insert" Pump are now also being used in manufacturing "Groove Seals"...

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These are only a few of the manufacturing advancements perfected for the "Improved Insert" that are also used in the Flupaco "Groove Seals." That's why "Groove Seals" today give you even better performance, greater wear resistance, fewer pulling jobs—to cut your pumping costs.

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The "Volume Producer" features quick installation, simple design and maximum cross-sectional displacement. It is long wearing, easily serviced, and especially efficient for large volume wells.

A low priced precision pump for stripper well service, the "Petrol A" will reduce pumping costs to the core on marginal jobs. Like the other "Groove Seals," this pump meets all A.P.I. standards.

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GULF COAST HEADQUARTERS: 2301 CONGRESS AVENUE, HOUSTON, TEXAS

WORLD'S LARGEST EXCLUSIVE OIL WELL PUMP MANUFACTURERS

INSTALL FLUPACO "GROOVE SEALS" FOR MAXIMUM PERFORMANCE AT AN ECONOMICAL PRICE

Second Well in Raisin City District Is Started

By L. P. STOCKMAN

LOS ANGELES, Calif., June 16.—Shell Oil Co., which is believed to have discovered a new oil and gas field in the Raisin City district of Fresno County has staked location for a second well to be drilled in that area and actual drilling is expected to get under way within the next 2 weeks. In the meantime, the company has shut in 8-18 Properties, Inc., the discovery well, but will produce enough gas to drill the next well. Shell's new location is a southerly offset to the discovery well and will be drilled on acreage leased from Santa Ana and Fresno Land Co. in 19-15s-18e. The discovery well is located in 18-15s-18e. Drilling operations will be watched with interest because if work in this district results in discovery of a commercial accumulation it will lead to additional exploration work north and south of Raisin City. The possible Raisin City field is the most northerly discovery to date and it only remains to be determined whether the oil sand found has enough kick to result in a natural flow. Shell completed 8-18 Properties, Inc., in a gas zone at 5,005-45 ft. and before being shut in the well was producing at a daily rate of 5,000,000 cu. ft. of gas along with about 25 bbl. of condensate. This area is showing a condition that is not found anywhere else in California and is rather hard to understand. This is the fact that the gas produced has a B.t.u. value of 1,000 and is 98.40 per cent methane and at the same time the well is producing about 25 bbl. daily of 35.9-gravity oil. The unusual condition is the large percentage of methane in the presence of a high-gravity crude oil and this is further emphasized by the fact that the gas only contains 0.04 of a gallon of natural gasoline per 1,000 cu. ft. of gas.

SUMMARY OF COMPLETIONS

	No.	Bbl.	Footage
Oil wells: San Joaquin Valley	8	6,701	46,578
Coastal district	2	3,151	11,827
Los Angeles Basin	12	4,435	41,764
Gas wells: San Joaquin Valley	3	.....	12,925
Dry holes: San Joaquin Valley	2	.....	3,185
Coastal district	1	.....	3,239
Total	28	.....	133,975
Recomp.: Coastal district	1	1,320	.....
Los Angeles Basin	2	315	.....

AVERAGE DAILY PRODUCTION

	June 14	June 7
Wilmington	84,525	83,225
Midway-Sunset	54,125	51,150
Long Beach	41,950	41,625
Kettleman North Dome	38,250	36,275
Coalinga	35,650	36,750
Ventura Avenue	32,750	34,025
Huntington Beach	30,150	30,550
Dominguez	26,350	25,575
Santa Fe Springs	23,325	22,750
Santa Maria Valley	18,625	16,995

Buena Vista Deep Test Below 14,200 Ft.

Honolulu Oil Corp. was still drilling ahead at the close of the present week in its 25-P in the Buena Vista Hills anticline in the Midway-Sunset field of Kern County and at 14,200 ft. the hole does not look any more promising than it did higher up. The bit went into a softer formation at 14,155 ft. but this was found to be a gray sand which may or may not be the Vedder. This is the deepest well drilled in the Midway-Sunset field to date and is at the same time the deepest well drilled with electricity. It is located in the same section in which Honolulu Oil Corp. made its discovery in the Buena Vista Hills anticline a number of years ago and for this reason it has special significance to the company in addition to the attempt to develop commercial production. Many operators feel that because of the well's extreme depth any discovery made from now on must be of a substantial nature to justify this deep drilling under present conditions with the pay-out time lengthened to at least 5 years due to the low allowable for top wells. It is generally recognized, however, that if Honolulu succeeds in developing commercial production above 15,000 ft. it will indicate the existence of a very large reserve in this section of the state.

Top Leasing Holds Up Paloma Unitization Development

Normal progress is being made in the proposal to unify drilling and production activities in the Paloma field of Kern County and while it had been hoped to put this plan into effect on July 1 next it may be another few weeks after that date before actual operation becomes a reality. This delay is not due to any deflection on the part of operators holding possibly productive acreage within the recognized potentially productive area. Article 10 of the original agreement will have to be changed due to a condition that has arisen beyond control of the parties to the agreement but this should not cause any great change in status. The condition which may necessitate the change in the article in question is due to the fact that another party has top leased the Morgan lease of Union Oil Co. thus forcing Union to proceed with drilling operations immediately. Union had indicated its desire to become a party to the agreement and will probably do so but for the present will be obliged to proceed to develop its Morgan property in order to protect its interest. This top leasing has become a vicious practice and consists of the taking of a second lease which becomes valid in the event the original lease becomes invalid. It prevents an operator from securing an extension of time such as is necessary in the present attempt to unify the Paloma field.

SAN JOAQUIN VALLEY COMPLETIONS

Coalinga Southeast, Fresno County: Superior Oil Co. 10-B Cagle, 6-20s-16e, flowed 1,495 bbl., 26.6-gravity, 0.1 per cent cut, 975,000 cu. ft. gas, 30/64-in. bean, pressures 950/1,175 lb., T.D. 8,180 ft., perf. 7,923-8,180 ft., completed in Gatchell oil sand (Eocene) age.

Coles Levee, Kern County: Standard 20-9 Kern County Land, 9-31s-25e, flowed 8,894,000 cu. ft. gas, 1-in. bean, pressures 350/1,045 lb., S.I. pressures 2,150/2,200 lb., T.D. 5,136 ft., perf. 5,095-5,135 ft.

Union 78-2 Kern County Land, 2-31s-25e, flowed 617 bbl., 36.7-gravity, 0.6 per cent cut, 667,000 cu. ft. gas, ½-in. bean, pressures 580/850 lb., T.D. 9,813 ft., perf. 9,561-9,732 ft., top upper Stevens oil sand 9,597 ft., bottomed in Stevens oil sand, completed with fish in bottom part of hole.

Elk Hills, Kern County: Standard 42-33 fee, 33-30s-24e, pumped 380 bbl., 22.2-gravity, 2 per cent cut, elev. 59 ft., T.D. 3,210 ft., completed in upper Elk Hills zone (Pliocene), extends productive limits.

Greeley, Kern County: Superior 1 Lewis, 12-29s-25e, flowed 1,657 bbl., 37.1-gravity, 0.1 per cent cut, 863,000 cu. ft. gas, ½-in. bean, pressures 1,300/1,450 lb., T.D. 11,490 ft., 120-mesh perf. 11,357-11,490 ft., completed in Rio Bravo zone 11,357-90 ft. and Vedder zone 11,423-90 ft.

Lancaster area, Kern County: Antelope Oil Co. 1 Duhart, 36-8n-15w, abandoned at 2,050 ft., 12½-in. water string 670 ft., no showings of importance found, bottomed in very hard formation, possibly granite.

Mount Poso, Kern County: General Pet. Corp. 5 Heisen, 16-27s-28e, pumped 77 bbl., 15.7-gravity, 4.5 per cent cut, T.D. 1,847 ft., perf. 1,795-1,845 ft., completed in Vedder zone 1,797-1,847 ft. (Miocene).

General Pet. Corp. 35 Heisen, 16-27s-28e, pumped 150 bbl., 15.5-gravity, 0.5 per cent cut, T.D. 1,828 ft., perf. 1,776-1,828 ft., completed in Vedder zone 1,778-1,828 ft.

Shell 27 Security, 16-27s-28e, pumped 257 bbl., 15.5-gravity, 10 per cent cut, T.D. 2,000 ft., perf. 1,956-2,000 ft., completed in Vedder zone 1,957-2,000 ft.

Pixley area, Tulare County: G. W. Stout 1 Stout, 35-22s-27e, abandoned at 1,135 ft., 4¾-in. combination string 770 ft., slate 750 ft., bottomed in granite basement 1,135 ft.

Rio Vista gas field, Solano County: Standard 1 Oulton, 9-3n-3e, flowed est. 12,000,000 cu. ft. gas, T.D. 3,920 ft., perf. 3,802-3,920 ft., completed in Cretaceous gas zone, no actual gage made.

Ten Section, Kern County: Shell 75-30-A Kern County Land, 30-30s-26e, flowed 2,068 bbl., 34.9-gravity, 0.1 per cent cut, 4,610,000 cu. ft. gas, ¾-in. bean, pressures 1,400/2,000 lb., T.D. 8,210 ft., perf. 7,970-8,205 ft., completed in Stevens oil sand (Miocene) at 7,768-8,210 ft.

Vernalis gas field, San Joaquin County: Standard 2 Blewett, 25-3s-6e, flowed 3,743,000 cu. ft. gas, ¾-in. bean, pressures 1,160/1,160 lb., T.D. 5,507 ft., P.B. 3,869 ft., 60-mesh perf. 3,839-69 ft.

SAN JOAQUIN VALLEY OUTPOSTS

Belridge, Kern County: Sentinel Oil Co. 1 Belridge, 10-28s-20e, drilling 2,585 ft. in sand and blue shale, elev. 731 ft.

Section 27 Oil Co. 1 Aslin, 27-28s-22e, drilling in surface sand 108 ft.

Elk Hills, Kern County: Standard 42-31-S fee, 31-30s-24e, T.D. 8,021 ft. in shale, fishing drill pipe, elev. 1,122 ft.

Standard 45-19-S fee, 19-30s-24e, drilling 8,697 ft. in sand and shale, elev. 707 ft.

Standard 7-33-S fee, 33-30s-24e, building rig, elev. 59 ft.

Kettleman North Dome, Kings County: Standard 1-1-U fee, 1-23s-16e, T.D. 12,296 ft., fishing drill collar and bit, elev. 693 ft.

Midway-Sunset, Kern County: North Amer. Oil Cons'd. 1-28 W.P., 28-32s-23e, T.D. 7,824 ft. in very hard shale with streaks of tight impervious sand, checking log, elev. 1,560 ft.

SAN JOAQUIN VALLEY WILDCATS

Buena Vista Hills district, Kern County: Honolulu 25-P fee, 10-32s-24e, drilling 14,200 ft. in hard fine gray silty sand of Miocene age, objective is Rio Bravo and Vedder zones, elev. 916 ft.

Texas 9 Thornber, 34-31s-24e, drilling 4,599 ft. in sand and shale, elev. 404 ft.

Buttonwillow district, Kern County: Texas 47-15 Southern Pacific, 15-29s-24e, T.D. 11,691 ft., drilling in sand and shale, elev. 287 ft.

Superior 13 Kern County Land, 18-29s-25e, T.D. 10,110 ft., set pipe, elev. 313 ft.

Bellevue district, Kern County: Ohio 1-G Kern County Land, 36-29s-26e, drilling 7,692 ft. in Stevens gray sand and shale.

Union 31-3 Kern County Land, 3-30s-26e, drilling 11,600 ft. in sand and shale, Stevens oil zone absent.

Famosa district, Kern County: C.C.M.O. 12-1 Famosa, 12-27s-26e, drilling 5,030 ft. in sand, top Olcese zone 3,838 ft., being drilled by Bell & Loffland; General Pet. Corp. and Richfield contributing dry-hole money.

Lafayette district, Contra Costa County: Lafayette Oil Co. 1 Morris, 28-1n-2w, drilling at 1,161 ft. in sandy shale.

Lost Hills district, Kern County: Associated 46-16 fee, 16-27s-21e, drilling in sandy shale 2,596 ft., elev. 424 ft.

Maricopa district, Kern County: Bankline 24-24 Sunset, 24-11n-23e, temporarily suspended in gray siltstone at 4,345 ft., top Etchegoin 2,960 ft., elev. 970 ft.

Bankline 57-23 Sunset, 23-11n-23e, drilling in blue shale 1,098 ft., elev. 1,000 ft.

Pyramid Hills district, Kings County: Pyramid Prod. Co. 2 Spreckles, 16-24s-18e, drilling in surface sand 110 ft., elev. 673 ft.

Raisin City district, Fresno County: Shell 1-19 Santa Ana and Fresno Land, building rig.

Rio Vista district, Sacramento County: Amerada 1 Rapone, 31-4n-3e, drilling in sand 739 ft., elev. 20 ft.

Rio Vista district, Solano County: Amerada Pet. Corp. 1 Calif. Lands, 3-3n-3e, drilling 3,901 ft. in shale, elev. 1 ft.

Jergins Oil Co. 1 Twitchell, 8-3n-3e, location staked 330 ft. S, 1,200 ft. E from NW cor. section.

Superior 1 Larson, 8-3n-3e, location staked 330 ft. S, 1,023 ft. E from NW cor. section.

Superior 1 McCormack, 9-3n-3e, location staked 3,680 ft. N, 330 ft. E from SW cor. section.

Sacramento district, Sacramento County: Portable Drlg. & Equip. Co. 1 Sacramento, 35-8n-4e, T.D. 297 ft. in surface sand.

Sharkey Landing district, Glenn County: Holly Sugar Co. 1 fee, 32-22n-1w, drilling 2,198 ft. in sand and shale, elev. 32 ft.

Shafter district, Kern County: Continental 2-G Kern County Land, 35-27s-24e, T.D. 11,349 ft., redrilled to 11,041 ft., P.B. 1,050 ft., redrilling 1,065 ft.

Tejon district, Kern County: Richfield 2-A Tejon, 19-11n-18e, rigging up rotary tools.

Dominguez Most Active Field In Los Angeles Basin

The Dominguez field of Los Angeles County has become the hottest spot in the state as far as aggressive drilling is concerned. Location was staked late this week for the first well to be drilled west of Main Street and early drilling is expected. Heretofore all work has been located east of Main Street on properties adjoining Union Oil's Austin lease on the west. In order to protect its Austin lease from drainage, Union Oil Co. is matching well for well along the west line of the property and may find it necessary to drill another two or three wells south of present drilling. It is believed quite probable that the northern limits of production have been established in which event future drilling will be toward the south and west. Early this week the West Dominguez Oil Co. reached a depth of 7,300 ft. in 1 Gross and at this depth only found 10 ft. of oil sand. This is just what had been expected by Hiles and Crawford who found a similar condition in their first well and West Dominguez Oil Co. is now preparing to do what Hiles and Crawford did in their extension well. This is to put a whipstock in the hole and drill toward the south. This definitely limits drilling operations to the north as far as the seventh Callender zone is concerned. It will be recalled that Hiles and Crawford failed to find any oil in the eighth Callender zone and for this reason it is logical to assume that other wells north of this location will also find the eighth Callender oil sand missing. The field is still wide open to the west and it remains to be seen just how far out the oil sand extends. There is no curtailment in effect in the townlot section in the west end of the field as operators are attempting to get out as much oil and gas as possible and as soon as possible

as each additional completion reduces the amount of recoverable oil and gas of wells now producing.

New Miocene Producing Zone in Prospect at Inglewood

Drilling operations in the Inglewood field are still showing an increase in the northwestern end of the field but this is overshadowed by the possible discovery of a new intermediate zone in the Miocene. This has not been definitely established but some definite indications should be forthcoming within the next several days. Logs of drilling wells tend to indicate quite conclusively that the Miocene is rising toward the east and that wells drilled within the original limits of the field will find the Miocene substantially higher than at first believed. There is no evidence available at present to indicate the possible existence of a fault between the northwest extension and the older section of the field although several wells have shown a pronounced unconformity below the top of the Miocene. It is believed probable that completion of 7 Smith of Texas Co. will result in the starting of Miocene development by other operators holding adjacent acreage.

LOS ANGELES BASIN COMPLETIONS

Dominguez, Los Angeles County: Hiles-Crawford and associates 1 Barnes, 29-3s-13w, flowed 1,162 bbl., 31.6-gravity, 0.5 per cent cut, 875,000 cu. ft. gas, ¾-in. bean, pressures 200/650 lb., T.D. 7,229 ft. perf. 7,175-7,229 ft., completed in seventh Callender zone (Miocene).

Union 10 Austin, 29-3s-13w, flowed 1,080 bbl., 31.5-gravity, 2 per cent cut, 900,000 cu. ft. gas, ¾-in. bean, pressures 250/750 lb., T.D. 7,228 ft., perf. 7,174-7,228 ft., completed in seventh Callender zone.

Union 16 Carson, 32-3s-13w, pumped 200 bbl., 28.6-gravity, 5 per cent cut, T.D. 8,569 ft., P.B. 8,515 ft., perf. 8,165-8,512 ft., completed in eighth Callender zone (Miocene).

Union 50 Hellman, 33-3s-13w, pumped 90 bbl., 30.1-gravity, 3 per cent cut, 72,000 cu. ft. gas, T.D. 4,255 ft., perf. 3,931-4,254 ft., completed in first Callender zone (Pliocene).

Huntington Beach, Orange County: Signal O. & G. 11-B Bolsa, 34-5s-11w, pumped 435 bbl., 22.8-gravity, 6 per cent cut, T.D. 2,530 ft., perf. 2,045-2,530 ft., completed in Bolsa zone (Pliocene).

Signal O. & G. 12-B Bolsa, 34-5s-11w, flowed compressor 412 bbl., 22.6-gravity, 3 per cent cut, 37/64-in. bean, T.D. 2,410 ft., perf. 1,899-2,410 ft., completed in Bolsa zone.

Southwest Expl. Co. 39 State, 10-6s-11w, pumped 590 bbl., 23.9-gravity, 0.5 per cent cut, T.D. 4,490 ft., perf. 3,646-4,490 ft., completed in tideland accumulation beneath Pacific Ocean by directional drilling.

Long Beach, Los Angeles County: Richfield 3 Connet, 28-4s-12w, pumped 121 bbl., 21-gravity, 40 per cent cut, T.D. 6,247 ft., P.B. 5,860 ft., perf. 5,762-5,860 ft., completed in Brown zone (Pliocene).

Richfield, Orange County: Valley Pet. Co. 1 Kraemer, 36-3s-9w, pumped 20 bbl., 19.2-gravity, 60 per cent cut, T.D. 2,750 ft., P.B. 2,660 ft., perf. 2,100-2,750 ft., completed in upper zone (Pliocene) age.

F. O. Whitelaw 1 Rich. Comm., 33-3s-9w, pumped 65 bbl., 24.1-gravity, 2 per cent cut, T.D. 4,855 ft., perf. 4,695-4,835 ft., deepened from 4,030 ft., productive zone is of Pliocene age.

Torrance, Los Angeles County: L. A. Basin Pet. Co. 1 Phillips, 30-4s-13w, flowed 95 bbl., 14.6-gravity, 3 per cent cut, 16/64-in. bean, pressures 25/50 lb., T.D. 3,755 ft., perf. 3,522-3,755 ft., completed in equivalent of Ranger zone (Pliocene) age.

Wilmington, Los Angeles County: Anchor Oil Co. 2 L.A.C.Y., 34-4s-13w, pumped 110 bbl., 15.2-gravity, 7 per cent cut, T.D. 3,576 ft., perf. 3,239-3,574 ft., completed in Ranger zone.

Pac. West. Oil Corp. 2 Patten, 32-4s-13w, pumped 250 bbl., 14.9-gravity, 5 per cent cut, T.D. 3,550 ft., 80-mesh perf. 2,610-2,951 ft., 3,269-3,550 ft., recompleted in Ranger zone after hole redrilled to original depth and gravel packed.

Petromont Oil Corp. 1 Wilmington, 32-4s-13w, pumped 120 bbl., 15.6-gravity, 5 per cent cut, T.D. 3,723 ft., 80-mesh perf. 3,030-3,125 ft., 3,187-3,310 ft., 3,395-3,650 ft., 3,665-3,718 ft., completed in Ranger zone.

LOS ANGELES BASIN OUTPOSTS OR DEEP TESTS

Dominguez, Los Angeles County: Atha and associates 1 Dominguez, 29-3s-13w, rig erected, elev. 35 ft.

Crawford-Hiles and associates 1 Dominguez, 29-3s-13w, drilling 7,229 ft. in oil sand, elev. 36 ft.

Dominguez Associates 1 Clark, 29-3s-13w, derrick erected and hauling in equipment.

Edgemont Pet. Co. 1 Dominguez, 29-3s-13w, drilling 7,160 ft. in sand and shale, elev. 35 ft.

Hiles-Crawford and associates 1 Willis, 29-3s-13w, drilling in sand and shale 4,382 ft., elev. 35 ft.

Johnsen and Richardson 1 Clemar, 29-3s-13w, drilling 6,481 ft. in sand and shale.

N. W. Dominguez Oil Co. 1 Grant, 29-3s-13w, rigging up for immediate spud.

R. P. M. Oil Co. 1 Barnett, 29-3s-13w, rigging up for immediate spud.

West Dominguez Associates 1 Gross, 29-3s-13w, drilling 7,300 ft. in sand and shale.

Inglewood, Los Angeles County: R. R. Bush Oil Co. 1 Merchants, 7-2s-14w, drilling in sandy shale 7,131 ft., elev. 190 ft.

R. R. Bush Oil Co. 1 Smith, 7-2s-14w, drilling 7,587 ft., elev. 185 ft.

Federal Oil Co. 2 Smith, 7-2s-14w, drilling 7,380 ft. in sandy shale, elev. 215 ft.

Hogan Pet. Co. 8 Machado, 7-2s-14w, drilling sand and shale 7,382 ft., top Miocene 5,490 ft., elev. 100 ft.

Oscar Howard 1 Dominguez, 7-2s-14w, drilling 6,891 ft. in sand, elev. 135 ft.

Jefferson Oil Co. 1 Smith, 7-2s-14w, drilling 7,780 ft. in oil sand, Nodular shale 7,230 ft., Miocene 5,740 ft.

Royalty Service Corp. 1 Marlow, 8-2s-14w, drilling in sand 4,682 ft., elev. 381 ft.

Texas 7 Smith, 7-2s-14w, drilling 7,650 ft. in sand and shale, top Nodular shale 7,237 ft., elev. 200 ft.

Rosecrans, Los Angeles County: R. S. Lytle 1 Anderson, 1-3s-14w, drilling 5,793 ft. in sand and shale, elev. 232 ft.

LOS ANGELES BASIN WILDCATS

Centinella district, Los Angeles County: Cliff Baker 1 L.A.I., 29-2s-14w, drilling 6,560 ft. in sand and shale, elev. 102 ft.

Chino district, San Bernardino County: Prado Pet. Corp 1 Lamp, 31-2s-7w, drilling 612 ft. in surface sand, elev. 560 ft.

Coyote West district, Orange County: Wilshire-Annex 1 Comm., 14-3s-11w, drilling 4,388 ft. in sand and shale, being drilled by Rocky Mountain Drilling Co.

East Santa Fe Springs district, Los Angeles County: Sierra Pet. Co. 1 Cole, 2-3s-11w, building rig.

Manhattan Beach district, Los Angeles County: Dominguez Ext. Oil Co. 1 Sunset, 19-3s-14w, rig erected over old well of Sunset Oil Co. abandoned at 7,865 ft., cleaning out 4,690 ft., elev. 135 ft.

Palos Verdes district, Los Angeles County: Newton Dev. Co. 1 P.V., 13-5s-15w, drilling 1,303 ft. in sand and shale with cable tools.

Puente district, Orange County: Sunset Oil Co. 1 Baldwin, 11-2s-11w, building rig.

New Deep Zone Found in Rincon Field

Chanslor-Canfield Midway Oil Co. appears to have discovered a new deep productive zone in the Rincon field of Ventura County at 9.337 ft. although its real importance remains to be determined. The company had the misfortune to lose the swab and subsequently found the tubing stuck just previous to completion. In an attempt to free the tubing the company circulated oil but washing operations have not been especially successful. The well has been flowing clean oil for several days and appears to be building up. It is possible that the company may suspend fishing and allow the well to flow. The water shutoff was effected with 6⅝-in. casing cemented at 8,265 ft. and the 2½-in. tubing was hung at 8,863 ft. This well is very important and may lead to extensive drilling in the Rincon field provided it shows favorable production and sufficient kick. This field has never been especially productive and operators are naturally following develop-

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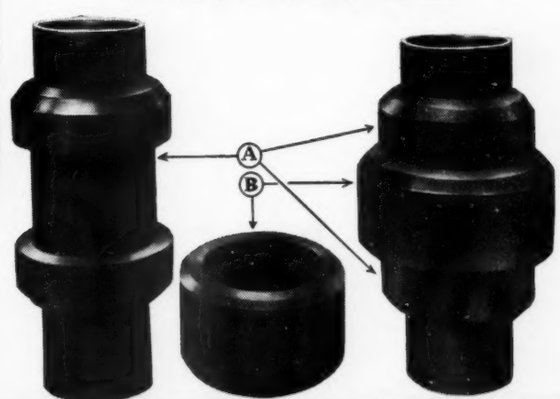

GRIZZLY "HUG-TITE" DRILL PIPE BEARING-PROTECTOR

ments with interest as this new zone may enable pioneers to make up some of the losses sustained in early drilling. Geologically there is every reason to expect productive zones below present horizons and the only question is whether they are worth developing. Acreage along the ocean front in the Rincon field consists of relatively small holdings and for this reason aggressive drilling can be expected if the new zone proves highly productive. It may also revive tideland development although some of the several permits granted have since expired due to inability to produce economically from the upper zones.

Activity in Santa Maria Valley Increasing

The Santa Maria Valley field of Santa Barbara County is showing increased drilling and additional work may get under way within the next several weeks. Union Oil Co. has started two new wells and has two more being rigged up for immediate work. Signal Oil & Gas Co. is running one string and has two additional wells being prepared for spud and Pacific Western Oil Co. has one well drilling, another in the rig stage, and a third location staked. George F. Getty, Master Oil Co., and Bel-Air Oil Co. each have a derrick standing. In the Cat Canyon district of Santa Maria, Standard Oil Co. has passed 4,000 ft. in 2 Los Flores and should pick up the pay within the next 3,000 ft. Due to an unconformity in this area it is impossible to estimate just where the pay may be found although it is logical to assume that this well should find the oil sand at approximately the same depth at which it was logged in Standard's discovery well. Standard is obligated to drill two additional wells on the Los Flores property this year and it is quite likely that Union Oil Co. will also undertake additional drilling in this area in the near future.

COASTAL DISTRICT COMPLETIONS

Goleta area, Santa Barbara County: Texas 3-A Bishop, 13-4n-29w, abandoned at 3,239 ft., 9⅝-in. surface string 197 ft., Vaqueros shell 3,122 ft.

Ventura Avenue, Ventura County: Associated 5 McGonigle, 23-3n-23w, flowed 1,320 bbl., 32.8-gravity, 6.2 per cent cut, 1,117,000 cu. ft. gas, 2-in. bean, pressures 125/800 lb., T.D. 8,264 ft., perf. 8,055-8,259 ft., deepened from plugged depth of 6,805 ft., originally completed at 7,005 ft., recompleted in 57 zone (Pliocene).

Newhall-Potrero, Los Angeles County: Barnsdall 20 R.S.F., 27-4n-17w, flowed 1,151 bbl., 33.5-gravity, 0.4 per cent cut, 730,000 cu. ft. gas, 30/64-in. bean, pressures 800/250 lb., T.D. 7,216 ft., perf. 6,957-7,179 ft., 7,186-7,206 ft., completed in third Modelo zone (Miocene).

Santa Maria Valley, Santa Barbara County: Union 4 Russell, 21-10n-34w, flowed 2,000 bbl., 16.4-gravity, 1.1 per cent cut, 1-in. bean, pressures 135/150 lb., T.D. 4,611 ft., perf. 4,223-4,603 ft., bottomed in Franciscan basement and completed in usual productive zone.

COASTAL DISTRICT WILDCATS

Aliso Canyon, Los Angeles County: Associated 1 Mission, 26-3n-16w, building rig and hauling in equipment.

Castaic district, Los Angeles County: Barnsdall 1-17-A Honor Rancho, 5-4n-16w, T.D. 4,717 ft. in tight oil sand, temporarily suspended, excellent gas showings but little oil below 2,250 ft., drilling second test, elev. 1,317 ft.

Barnsdall 1-19-A Honor Rancho, 7-4s-16w, drilling 4,467 ft. in siltstone and sand, elev. 1,244 ft.

R. W. Young 1 Walker, 11-4n-16w, rigging up, elev. 1,200 ft.

Del Valle district, Los Angeles County: Fred Jasper 1 Videgain, 17-4n-17w, drilling 5,598 ft. in Pico sand and shale, correlating higher than adjacent wells.

R. E. Havenstrite 3 Lincoln, 16-4n-17w, T.D. 7,640 ft. in gray sand, first and second Miocene zones tested wet, showed salt water, drilling ahead, elev. 1,102 ft.

Elwood district, Santa Barbara County: Barnsdall-Rich field 88-11 State, tideland, drilling 2,594 ft., will be Sespe test, elev. 21 ft.

Loma Grande district, Monterey County: Loma Grande Oil Co. 1 Corey, 23-24s-10e, T.D. 3,790 ft. in shale, fishing drill pipe, elev. 1,500 ft.

Los Flores district, Santa Barbara County: Standard 2 Los Flores, 27-9n-33w, drilling in sand and shale 3,782 ft., elev. 1,084 ft.

Newhall district, Los Angeles County: Aztec Oil Co. 1 Sanborn, 6-3n-16w, drilling 4,300 ft. in sandy shale, moving in heavier equipment, elev. 1,516 ft.

St. Anthony Oil Co. 1 La Salle, 10-3n-16w, drilling in surface sand 425 ft., elev. 1,480 ft.

Tunnel Oil Co. 1 Needham, 13-3n-16w, graded road and location, expect production around 1,550 ft., elev. 1,681 ft.

Texas 1 Whitnah, 14-3n-16w, drilling 4,610 ft. in sand, elev. 1,934 ft., located on major Pico anticline.

Oak Canyon district, Los Angeles County: Western Gulf 2 Lechler, 31-3n-17w, T.D. 7,187 ft., P.B. 6,980 ft. in hard Modelo oil sand and shale, will set 7-in. pipe around 6,900 ft., running lower structurally than discovery well, shows some gas, elev. 1,489 ft.

Rincon, Ventura County: C.C.M.O. 9-C Hobson, 17-3n-24w, drilling sandy shale with streaks of oil sand 9,338 ft., this is deepest well drilled in field to date, has had two zones that might be productive, water shutoff O.K. but formation looks wet at 8,265-9,335 ft., lost swab, found tubing stuck, washing with oil to loosen, elev. 49 ft.

Illinois Fields

(Continued from Page 85)

set to McClosky, waiting on cement.

Moultrie County: Olson Drlg. 1 Ekiss, 31-14n-4e, first report, Cypress 1,535 ft., Renault 1,630 ft., Aux Vases 1,650 ft., Ste. Genevieve 1,700 ft., drilling 2,550 ft.

Pulaski County: R. G. Williams et al 1 W. L. Richey, NE SE SW 9-15s-1e, fishing 1,253 ft.

Randolph County: Gode & Murphy 1 McIntyre, SW SW SW 10-5s-5w, slight show oil 871-79 ft., drilling 1,091 ft.

General O. & G. 1 J. Schmall, SE NE SW 27-4s-7w, Spud and S.D.

Richland County: J. Davis 1 S. C. Shan, W½ SW NW 27-3n-9e, McClosky 3,036 ft., 1,000 gal. acid, swabbed 50 bbl. in 20 hr., 3,000 gal. reacid, swabbed 40 bbl. in 8 hr., testing.

C. B. Hill et al 1 Wood, NE SE SE 21-2n-14w, T.D. 3,100 ft., putting on pump.

St. Clair County: G. Morris 1-A Rasp, NW NW SW 32-2n-7w, Warsaw 1,036 ft., Kinderhook 1,410 ft., Louisiana 1,466 ft., Chattanooga 1,493 ft., Devonian 1,511 ft., S.D. 1,533 ft.

Alspach 1 Boyle, SE SE SW 31-3s-6w, base Pennsylvanian and Menard 175 ft., Glen Dean 275 ft., Hardinsburg 320 ft., Golconda 345 ft., S.D. 435 ft.

Magnolia 1 M. Probst, SE SE SE 2-2s-9w, drilling 60 ft.

Saline County: Thompson 1 O. Carter, NW NE SE 16-8s-7e, S.D. 2,265 ft.

Carter & Vaugn 1 H. Roberts, SE SW NE 6-8s-7e, S.D. 1,310 ft.

Shelby County: Oil, Inc., 1 Barkhurst, SW SW NE 7-10n-3e, moving in rotary tools.

Tazewell County: Bartelmay 1 Mathis, SW NW SW 24-25n-3w, drilling 1,442 ft.

Wabash County: Kennedy et al 1 Carson, S½ SW SE NE 16-1s-12w, T.D. 2,401 ft., P.B. 2,112 ft., 30-min. D.S. test 2,095-2,125 ft., recovered 120 ft. oil and 180 ft. mud and salt water, 7-in. 2,072 ft., drilling plug.

Washington County: C. A. Smith 1 Mittendorf, SW SW SE 8-2s-4w, Osage 1,840 ft., Hardinsburg 2,363 ft., Devonian 2,372 ft., drilling 2,440 ft.

Wayne County: Texas 1 R. M. Draper, N½ NW SW 8-3s-6e, location, first report.

Texas 1 Joe Lewis, S½ NE SW 5-3s-6e, location, first report.

Witt 1 Murphy, E½ SW NE 15-3s-5e, first report, moving in rotary tools.

White County: Pure and Carter 1 Kisner, SE SE SE 7-6s-9e, location, first report.

Millison Bros. 1 M. P. Chandler, NW NW SW 30-5s-14w, location, first report.

First Nat. Pet. Trust 1 Johnson, NE SE NW 5-5s-14w, first report, 10-in. 125 ft., drilling 250 ft.

L. B. Jackson 1 Hanna, NE NE NE 28-5s-10e, T.D. 3,155 ft., P.B. 1,960 ft., 40-qt. shot 1,862-73 ft. casing collapsed, S.D.

Roche-Boyles et al 1 C. Groff, E½ SE SW 25-3s-10e, set 10-in. 48 ft., drilling 2,330 ft.

Ryan Oil et al 1 Lamont, NE SW SW 33-3s-10e, set 10-in. 123 ft., West Franklin 562 ft., Kincaid 2,045 ft., drilling 2,480 ft.

Whiteside County: J. F. Morse 1 Sheldon, NW SW NW SE 11-19n-7e, drilling 1,384 ft.

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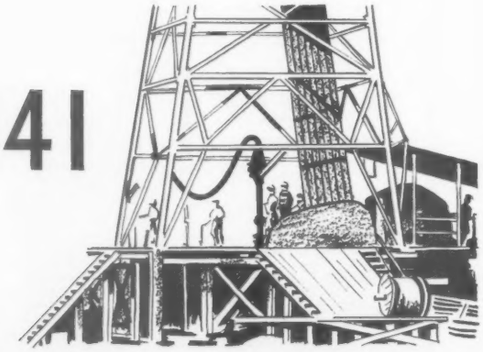

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TEXAS GULF COAST

Maurbro Field, Jackson County, Extended Outside Block

By NEIL WILLIAMS

HOUSTON, Tex., June 16.—As wildcatting and field development in many areas of the Texas Gulf Coast district were being curtailed by rising water as the result of heavy rains the past week, several important extensions were assured and a general increase in activity is anticipated when weather permits.

An important southeast extension was assured the new Maurbro field, Jackson County, as Wheelock & Collins 1 McCrory-Westoff, 3,000 ft. southeast of production flowed 118 bbl. of oil per day through a ⅛-in. choke while testing through perforated casing at 5,219-29 ft. Total depth is 5,280 ft. Discovered in February of this year, development of the structure heretofore has been done solely by Humble Oil & Refining Co. which controls the majority of the acreage. The completion extends production outside of the company's block and opens the way for development by other operators and companies controlling production in the area.

SUMMARY OF COMPLETIONS

	No.	Bbl.	Footage
Oil wells: Lolita	2	577	12,362
West Ranch	3	678	16,925
Other fields	14	4,238	103,663
Gas wells: Fields	1	.....	6,752
Dry holes: Fields	2	.....	9,895
Wildcats	2	.....	12,562
Total	24	.....	162,159

WEST SILSBEE.—The West Silsbee field, Hardin County, gained its second producer as Republic Production Co. 2 Elliott fee was flowing oil and wash water while testing the Cockfield sand at 6,853-59 ft., the total depth. Sand and shale showing oil and gas was cored at intervals from 6,815-59 ft., and 5½-in. casing was cemented at 6,853 ft. after a 35-minute drill-stem test at 6,857-59 ft. tested 105 lb. working pressure and recovered 1,620 ft. of pipe-line oil. The well is located northeast of the discovery well, completed several weeks ago to open a new field about 1½ miles southwest of the field proper.

ALTA LOMA.—A ½-mile-southwest extension to the Alta Loma field, Galveston County, looms as Stanolind Oil & Gas Co. prepared to test 4 Hulen after cementing 5½-in. casing on bottom at 9,096 ft. This is the first test to be drilled on the structure in several months. Details as to where the sand section was cored were not available.

GARWOOD.—Although no gage was available, W. R. Davis Co., Inc. 2-B Brownson was extending Cockfield production in the Garwood field, Colorado County, about 933 ft. west as the well was showing for a producer while testing through perforated casing at 6,104-09 ft.

Wilcox Trend Play

VIENNA.—Additional development was announced for the Vienna or Provident City field, Lavaca County, as Shell Oil Co., Inc., staked location for 1 Neuhaus, 990 ft. southwest of the northeast corner of the David Davis Survey, along the southeast line of the J. D. Ragsdale Survey, thence 990 ft. northwest at right angles. The location is about 1 mile southwest of M. McMurray 1 A. C. Allen, the discovery well which is flowing distillate from the Wilcox sand at 8,400 ft. Although little information is available, Shell 1 McManus, a Wilcox test in the Brushy Creek area, was attracting attention as reports were circulated that casing was being cemented below 9,200 ft. Whether the well will be tested or drilled deeper was not known.

TAMINA.—Hopes of opening Wilcox production in the Tamina area, Montgomery County, were not encouraging as D. B. MacDaniel 1 Baldwin, Walker County School Land Survey, swabbed salt water on a production test through perforated liner at 9,934-44 ft. At the end of the week the well was shut down for orders. To the northwest and located about 4,000 ft. southwest of the discovery well of the Lake Creek field, Superior 2 McWhorther was drilling ahead in shale below 9,378 ft. Sand and shale with oil and gas showings have been logged in the Wilcox, although the well at the present depth is below that of the discovery 9,200-ft. pay.

CLODINE.—Providence Oil Co. 1 Hatfield reported the previous week as opening a new field 2½ miles west of Clodine, Fort Bend County, looms as a small producer and may be worked over due to salt-water intrusion. On a recent gage the well flowed 60 bbl. of fluid per day through a 9/64-in. choke, of which 20 per cent was salt water and the balance 41.6-gravity oil. Tubing pressure was 2,500 lb. and shut-in casing pressure 2,650 lb. Top of the sand section in the Yeguaensis was 7,470 ft., with the base logged at 7,532 ft., and the water contact at 7,513 ft. Production is through perforated casing at 7,497-7,503 ft.

TEXAS GULF COAST COMPLETIONS

WILDCATS

Matagorda County: L. A. Wagner 1 Broughton, dry, T.D. 4,052 ft.

(Continued on Page 99)

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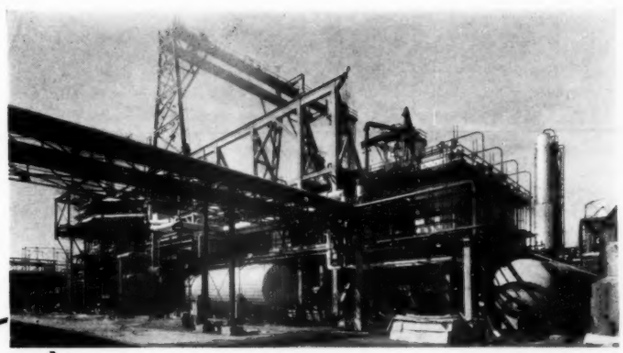

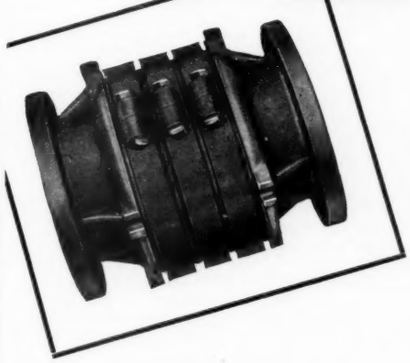

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Gas-Well Completions in Five Counties As Play Widens

By STAFF CORRESPONDENT

ASHLAND, Ky., June 16.—Gas-well completions hold the center of interest in eastern Kentucky this week with a midmonth report revealing that several wells have been drilled in. A combined daily production of 5,743,000 cu. ft. is noted from the 14 completions. Two dry wells are also included in the report while other operations continue on the upward grade.

An increase in the number of locations, and preparations for others, has been reported and local sources point to national defense production demands as the main factor for greater activities in this part of Kentucky. In Pike County, 29 wells are under way and other counties are also active. There are 12 drilling wells in Martin County, 3 in Lee, 2 in Knox, 3 in Johnson, 27 in Floyd, and 14 in Knott County.

SUMMARY OF COMPLETIONS

Eastern Kentucky

	No.	Bbl.	Footage
Gas wells	14	*5.7	31,759
Dry holes	3	.....	8,865
Total	17	.....	40,620

Western Kentucky

	No.	Bbl.	Footage
Oil wells	5	72	5,094
Gas wells	1	*0.6	1,437
Dry holes	8	.....	6,743
Total	14	.....	13,274
Input well	1	.....	616

Ohio

	No.	Bbl.	Footage
Oil wells	10	95	12,125
Gas wells	14	*11.7	36,399
Dry holes	14	.....	24,273
Total	38	.....	72,797
Input wells	11	.....	5,473

Indiana

	No.	Bbl.	Footage
Oil wells	2	294	5,750
Dry holes	3	.....	5,990
Total	5	.....	11,740

*Million cu. ft.

EASTERN KENTUCKY COMPLETIONS

Floyd County: John Allen et al 1 America Jarvis, Toms Creek, 920,000 cu. ft. gas at 1,425 ft.
United Carbon 1 Ed Bull, Left Fork of Beaver Creek, 179,000 cu. ft. gas, shale, at 2,464 ft.
United Carbon 935 M. L. Gibson, Little Branch, 179,000 cu. ft. gas at 2,810 ft.
Knox County: Kentucky-West Virginia 5288 David Martin, 189,000 cu. ft. gas, shale at 2,648 ft., R.P. 325 lb.
Kentucky-West Virginia 5297 Jesse Bates, 539,000 cu. ft. gas, shale, at 3,188 ft., R.P. 295 lb.
United Carbon 930 Kycoga Ld. Co. No. 14, Alum Cave Branch, 84,000 cu. ft. gas, shale at 3,050 ft.
E. C. Ware et al 1 L. B. Hayes, Troublesome Creek, 267,000 cu. ft. gas, at 2,991 ft.
Knox County: Parsons & Creek 1 fee, near Artemus, 60,000 cu. ft. gas, Corniferous at 2,123 ft.
Hall & Martin 2 Decker, Indian Creek, 189,000 cu. ft. gas, shale at 2,092 ft.
Petroleum Exploration 1 Sim Howard, Stinking Creek, 2,166,000 cu. ft. gas, Corniferous at 2,255 ft.
Laurel County: Globe Oil & Gas 1 Nat Sewell, Sinking Creek, dry at 3,220 ft.
Martin County: Southeastern Gas Co. 790 Asbury Waller, Chafin Branch, 696,000 cu. ft. gas, shale at 2,966 ft.
George Hale et al 1 Harrison DeLong, Middle Fork, 146,000 cu. ft. gas, shale at 2,640 ft.
Morgan County: J. B. May 1 W. S. McKinney, Grassy Fork, dry at 1,325 ft.
Pike County: Columbian Carbon GW-849 Asa May, Pond Creek, 29,000 cu. ft. gas at 4,316 ft., to be abandoned.
Jacobs et al 1 Wm. Huffman, Raccoon Creek, 100,000 cu. ft. gas at 1,107 ft.

WESTERN KENTUCKY DRILLING REPORT

Daviess County

Red Hill district: Mace et al 1 Len Sparks, 10 bbl., 100-qt. shot, Jett sand 944½-63 ft., T.D. 1,234 ft.
Gibson et al 3 Ira Bryant, 15 bbl., 100-qt. shot, Barlow sand 1,002-31 ft.
Whitesville district: Scholl 7 G. A. Weller, 10 bbl., 60-qt. shot, Jett sand 480-505 ft., T.D. 510 ft.
Utica district: Farmer et al 4 J. E. Brown, north tract, drilling at 310 ft.
Farmer et al 2 Verrena Fitts, rigging up.
Handyville district: Teller 6 E. F. Lebold, drilling at 300 ft.

Grayson County

Yeaman district: S. R. Berry 1 B. Porter, dry, T.D. 485 ft.

Henderson County

Hebbardsville district: Snowden & McSweeney 2 C. Bennett, dry through Jett sand, T.D. 1,526 ft.
Hupp 4 O. Busby (King-Pruitt Min.), 35 bbl., Jett sand 1,593-1,602 ft.
O. J. Connell et al 3 C. Bennett, drilling at 700 ft.
Niagara district: Stewart & Snyder 5 Mrs. D. Jackson, 12 bbl., 40-qt. shot, Pennsylvania sand 682-95 ft., T.D. 722 ft.
Stewart & Snyder 7 J. P. Cosby, drilling at 650 ft.
Zion district: Miller et al 1 Ustis, dry, T.D. 868 ft.

McLean County

Southwest Livermore district: Hupp 4 Livermore Timber Co., dry through McClosky, T.D. 1,768 ft.
Nuchols district: Miller et al 2 John Polles, dry, T.D. 1,330 ft.
Miller et al 1 W. E. Tanner, location.

Ohio County

Heflin district: J. Dobbs et al 1 Millie Bennett, 628,000 cu. ft. gas, Bethel sand 1,429-37 ft.
Askin district: Quarrels 8 J. W. Cheek, dry 350 ft.
Westerfield district: Kruse & Nelson 15 Dave King, abandoned location.
Friendship Church district: Scholl 8 Elmer Royal, dry, T.D. 780 ft.
Teller 18 A. A. Whitehouse, completed pressure well, T.D. 616 ft.

Cambridge Arch Test in Guernsey County Dry in Clinton

NEWARK, Ohio, June 16.—Ohio operations continued at a normal pace during the week. No new deep tests were staked. The Cambridge arch test in Guernsey County will not be deepened below the Clinton horizon, but was plugged at 4,902 ft. after finding a small oil showing. Harrison County test has been tubed as a gas well.

Ashland County yielded a 4,300,000-cu. ft. gas well. Meigs and Wayne counties reported fair gassers.

Drilling is now in progress at 700 ft. in the Ashtabula County test by the Ohio Oil Co. in Saybrook Township.

COMPLETIONS

Ashland County

Lake Township: Lyons 2 Clyde Eberhart, Sec. 10, 4,300,000 cu. ft. gas, Clinton, shot, T.D. 2,870 ft.
Stewart et al 3 Nancy Stewart, Sec. 21, dry, Berea, T.D. 735 ft.
Perry Township: Perry Oil 1 Eliz De Vault, Sec. 20, dry, Berea, T.D. 736 ft.

Athens County

Bern Township: Bern O. & G. 1 J. W. Tate, Sec. 18, 800,000 cu. ft. gas, second Cow Run, T.D. 854 ft.
Carthage Township: Hartley 1 J. B. Niggemeyer Fraction 34, dry, Berea, T.D. 1,735 ft.
York Township: Ohio Fuel 197 Sunday Creek Coal Co., Fraction 11, dry, Berea, T.D. 1,046 ft.

Coshocton County

Perry Township: Blackburn & Blackburn 1 Sarah E. Crawford, SE Sec. 24, 1,000,000 cu. ft. gas, Clinton sand, T.D. 3,035 ft.

Guernsey County

Adams Township: Ohio Oil 1 John Marshall, Sec. 16, 2 bbl., Clinton 4,660-96 ft., plugged, T.D. 4,902 ft.

Harrison County

Washington Township: East Ohio 1 Eliz. Phillips, Sec. 33, 570,000 cu. ft. gas after shot, Clinton 5,737-5,822 ft., Medina Red 5,897 ft., T.D. 5,899 ft.

Hocking County

Ward Township: Preston Oil Co. 1769 Sunday Creek Coal Co., SE Sec. 30, 25 bbl., Clinton sand, T.D. 3,450 ft.

Licking County

Newark Township: National Drlg. Co. 1 R. E. Jones, first quarter, dry, Clinton, T.D. 2,435 ft.
Newton Township: Penick et al 3 Ray Eshelman, fourth quarter, 680,000 cu. ft. gas, Clinton, T.D. 2,694 ft.
Ewing et al 1 Frank Linton, first quarter, dry, Clinton, T.D. 2,645 ft.
Mary Ann Township: William Stricker et al 4 E. H. Davis, fourth quarter, dry, Berea, T.D. 800 ft.

Lorain County

Penfield Township: William Dempsey 4 E. M. Bunt, Lot 40, dry, Berea, T.D. 215 ft.

Medina County

Chatham Township: Preston Oil Co. Special Account J7 J. F. Grigsby, Tract 15, Lot 11, 5 bbl., Berea, T.D. 498 ft.
Preston Oil Co. F06 J. F. Grigsby, input, Berea, T.D. 493 ft.
Preston Oil Co. F07 J. F. Grigsby, input, Berea, T.D. 476 ft.
Preston Oil Co. J07 J. F. Grigsby, input, Berea, T.D. 483 ft.
Preston Oil Co. J08 J. F. Grigsby, input, Berea, T.D. 490 ft.
Preston Oil Co. J09 J. F. Grigsby, input, Berea, T.D. 510 ft.
Preston Oil Co. K06 J. F. Grigsby, input, Berea, T.D. 514 ft.
Preston Oil Co. K08 J. F. Grigsby, dry, Berea, T.D. 535 ft.
Preston Oil Co. H6 D. A. Clapp, Tract 15, Lot 11, 5 bbl., Berea, T.D. 482 ft.
Preston Oil Co. F05 D. A. Clapp, input, Berea, T.D. 487 ft.
Preston Oil Co. G05 D. A. Clapp, input, Berea, T.D. 497 ft.
Preston Oil Co. J05 D. A. Clapp, input, Berea, T.D. 516 ft.
Preston Oil Co. J06 D. A. Clapp, input, Berea, T.D. 492 ft.
Preston Oil Co. K05 D. A. Clapp, input, Berea, T.D. 505 ft.

Meigs County

Orange Township: Ohio Fuel 1 Guy Dean, Sec. 36, 1,150,000 cu. ft. gas, Berea, T.D. 1,610 ft.
Walker Co. 1 Ira Findling, Sec. 30, dry, Berea (water), T.D. 1,660 ft.
Cooper-Lamp 1 Ernest Bahr, Sec. 15, dry, Maxon (water), T.D. 1,300 ft.
Salem Township: H. M. Nelson 1 Jesse Sanbury, Sec. 2, dry, Maxon (water), T.D. 977 ft.

Muskingum County

Brush Creek Township: Ohio Fuel 3 fee, Sec. 3, 700,000 cu. ft. gas, Clinton, shot, T.D. 4,064 ft.

Noble County

Noble Township: W. C. Harper 6 John Hayes, Sec. 34, 5 bbl., shot, sand 185-227 ft., T.D. 232 ft.
E. Parks et al 2 Nelson Leasure, Sec. 34, 1 bbl., shot, T.D. 275 ft.
Wayne Township: W. D. Lashley 1 Muskingum Conservancy district, Sec. 3, 50,000 cu. ft. gas, shot, Berea, T.D. 1,340 ft.

Perry County

Clayton Township: Preston Oil Co. 2 Mary A. Yarger, SE Sec. 5, 40 bbl., and 50,000 cu. ft. gas before shot, Clinton sand, T.D. 3,385 ft.
Reading Township: Preston Oil Co. 1 Anna M. Snider, N½ Sec. 4, 295,000 cu. ft. gas, Clinton sand, T.D. 3,107 ft.
Thorn Township: Preston Oil Co. 1 Ira Bashore, NE Sec. 34, 148,000 cu. ft. gas, Newburg, T.D. 2,204 ft.

Summit County

Green Township: East Ohio 1 W. H. Warner, Sec. 14, 400,000 cu. ft. gas, shot, Clinton, T.D. 4,392 ft.

Tuscarawas County

Franklin Township: Columbian Carbon 1 F. J. Benfer, Sec. 9, 33,000 cu. ft. gas, shot, Clinton, plugged, T.D. 4,543 ft.
Jefferson Township: Brendel Prod. 1 A. Boltz, second quarter, 300,000 cu. ft. gas, Berea, T.D. 1,032 ft.

Washington County

Grandview Township: James Hall 2 I. Amos, Sec. 10, 1 bbl., shot, first Cow Run, T.D. 795 ft.
Salem Township: Wenzel Oil 4 H. Wenzel, Lot 51, 1 bbl., shot, T.D. 1,046 ft.
Warren Township: Henderson Oil Co. 47 Dye heirs, SE Sec. 8, 2 bbl. before shot, first Cow Run sand, T.D. 700 ft.

Wayne County

Plain Township: Kemrow Co. 1 A. D. Casey, Sec. 33, 1,200,000 cu. ft. gas, Clinton, T.D. 3,049 ft.
Sugar Creek Township: Peaker-Nohe 1 W. F. Henderson, Sec. 22, 130,000 cu. ft. gas, Berea, T.D. 849 ft.

Wood County

Henry Township: C. L. Williams 1 Peters lot, North Baltimore, 10 bbl., Trenton, shot, Trenton 1,162-1,262 ft.

South Griffin Pool May Have 2½-Mile Extension

EVANSVILLE, Ind., June 16.—Mahutska Oil 1 Ed S. Holmans, NW SW NW 5-4s-13w, a mile northeast of Griffin in Posey County, showed for a small commercial well, natural, when plug was drilled in last week. The well was being given a 30-qt. shot during the latter part of the week in hopes of substantially increasing production. No. 1 Holmans is about 2½ miles southwest of production in the South Griffin field and about 1 mile southeast of a recently completed producer in 32-3s-13w. This area will probably prove to be an extension of the South Griffin field as no dry holes have been drilled in the intervening area.

Development of the Caborn field of Posey County is showing promise of a gradual increase. Hollandsworth & Bander 1 Ed Egli, NE NE SW 19-6s-12w, was being completed at the end of the week for an estimated 50 bbl. daily. Same operators, meanwhile, have staked location for 2 Egli, a south offset to No. 1.

Another Posey County wildcat, Host & Dye 1 Allyn, NW SE SW 14-7s-13w, proved disappointing in the Cypress last week and is drilling ahead to test

the Aux Vases and McClosky. No. 1 Allyn topped the Cypress sand at 2,390 ft. and is reported running about 40 ft. low compared with Crosby 1 Pauline Scherer, about 1 mile to the northeast. The latter well was abandoned about 2 years ago after unsuccessful tests of the McClosky.

GIBSON COUNTY.—A Gibson County wildcat 4 miles south of Mount Carmel, Ward Wickwire 1 Davis-Reding, SW SE SW 8-2s-12w, was drilling at McClosky depth late last week. No. 1 Davis-Reding, dry in the Cypress, topped the Ste. Genevieve series at 2,500 ft.

INDIANA COMPLETIONS

Wildcats

Gibson County: Oleum Pet. Corp. 1 Curd, SE NW NW SE 5-2s-8w, dry at 600 ft.
Pike County: G. W. Miller 1 Nixon, SE SW NE 14-3s-8w, dry at 4,560 ft.

Fields

Meron & Raley, Sullivan County: C. C. Davis 5 Huff, S½ SE SW 34-8n-10w, dry at 830 ft.
North New Harmony, Posey County: Superior 30 New Harmony, SW SE SW 34-4s-14w, location abandoned.
South Griffin, Gibson County: Continental 40 Bozeman, NE NE NW 26-3s-14w, pumped 150 bbl., pay 2,755-85 ft., 2,539-59 ft., T.D. 2,860 ft., P.B. 2,785 ft. Continental 25 Keck, SW NW SW 27-3s-14w, pumped 144 bbl. oil and 46 bbl. water, reamed 2,766-2,800 ft., 3,000 gal. acid 2,880-90 ft., T.D. 2,890 ft.

INDIANA DRILLING REPORT

Crawford County: Reece-Dietz et al 1 Esarey, NE NW NE 36-3s-1w, drilling 670 ft.
Daviess County: Swartzentruber et al 1 Beck, SE SW NE 8-2n-5w, first report, drilling 120 ft.
J. W. Cannon 1 Walker, N½ SE SE NE 5-2n-5w, set 8-in. 60 ft., drilling 404 ft.

(Continued on Page 95)

Kansas Fields

(Continued from Page 75)

water at 1,663-1,716 ft., Arbuckle 1,716 ft., drilling 1,970 ft., cavings.
Jefferson County: Caufield & Sullivan 1 Ragan, SW SW SE 29-10-20e, T.D. 1,710 ft. in Mississippi lime, bailed 1 gal. black oil per hour, P.B. 1,600 ft., S.D.
Leavenworth County: Archie 1 Schroeder, SE SW 28-9-20e, first report.
Nemaha County: Bumpus 1 Achten, S½ SE NW 12-4-14e, Mississippi lime 2,512 ft., drilling 2,517 ft.
Wabaunsee County: Epperson 1 Howard, SE NW 25-13-9e, Hertha 457 ft., drilling 626 ft.

Development of Deep Hunton Pay Started at Falls City

ST. JOSEPH, Mo., June 16.—Development of the deep Hunton lime zone, opened a week ago in the Falls City, Nebraska, pool by Ohio Oil Co. and Harry Harper 1 Sibbernsen, NW NE NW 20-1n-16e, was getting under way last week in spite of heavy rains and flood waters. Testing at the 1 Sibbernsen was carried on until work was stopped by the rains. It flowed 811 bbl. in 22½ hours; 842 bbl. in 24 hours and 862 bbl. in the next 24 hours.

Both the Ohio and Harry Harper have started other projects in the pool. Ohio was drilling ahead at its own 1 Sibbernsen, S½ S½ SW 17-1n-16e, and Harper was deepening 4 Sibbernsen, NW NW 20-1n-16e, which was temporarily plugged last fall.

Skelly Oil Co. was preparing to start 4 Davisson in 20-1n-16e, and Ohio was ready to test the Hunton at 4 Bahr, NE SW 17-1n-16e, as soon as the water recedes, and Black Gold Operating Co. found saturation in another well in the Shubert pool of Richardson County, the 1 Bahr, NE NE 36-3n-15e. Black Gold also announced two more locations in the pool.

West of the Falls City pool, several wildcat locations had been staked and a number of rigs were up. However, only a few were actually drilling (see below) and the rest were shut down for one reason or another. Missouri was unusually quiet with only one inactive operation reported.

WILDCATS COMPLETED

National 1 Oswald, NW SW 15-2n-14e, dry, T.D. 2,661 ft., Hunton 2,551 ft., some show oil, acidized several times, on last test after P.B. 2,623 ft., filled up 12 bbl. oil and 15 bbl. water, Richardson County.

NEBRASKA DRILLING REPORT

Gage County: Walt Rider 1 Warren, NE NE 21-3-5e, St. Peter 2,753 ft., pre-Cambrian 2,820 ft., 5-in. 2,770 ft., T.D. 2,858 ft.
Johnson County: W. H. Skelton 1 Rulla, SW SW 24-5-9e, first report, west slope Nemaha Ridge.
Morrill County: Price 1 Bonner, SE SE SE 10-23-49w, S.D. 4,684 ft.
Nemaha County: Ellis 1 Armstrong, W½ NE 10-6-15e, S.D. 475 ft.
Bow & Arrow 1 Wrightsman, W½ SW NW 36-6-14e, base Kansas City 1,027 ft., drilling 1,647 ft.
Otoe County: Parker 1 Hays, E½ NE NE 3-7-9e, drilling 500 ft.
Richardson County: Palensky 2 Kalous, SW SW SW 5-2n-13e, cored gray dolomite 1,564-77 ft., cored 1,577-89 ft. and 1,589-98 ft., no show, T.D. 1,598 ft.

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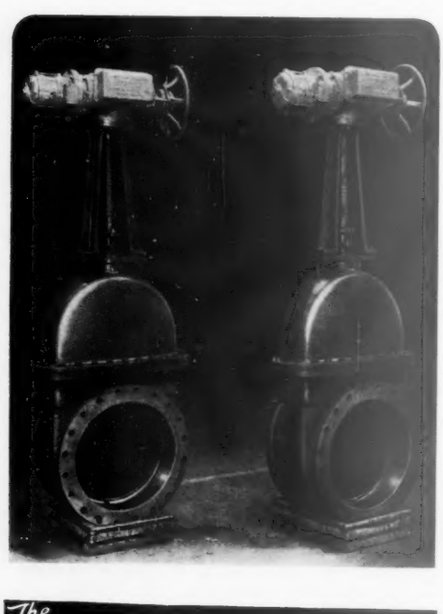

The LUDLOW VALVE MFG·CO·INC· SINCE 1866 TROY·N·Y·

ROCKY MOUNTAIN AREA

Shallow Gas Play Extends Into North Dakota

By T. R. INGRAM

DENVER, Colo., June 16.—Out of 14 completions in the Rocky Mountain area, Montana accounted for 11, of which 8 were gas wells, including one wildcat. The only completion in Colorado was a 50-bbl. high-gravity well in the Rangely field in Raven Oil & Refining 32 Government.

Wyoming had two completions, of which one was Indian Oil 2 Tribal, SW SW NW 23-6n-2w, Maverick Springs field, agent for Ohio Oil Co., was completed for 570 bbl. initial in base of Embar at 1,663 ft., total depth. Saturation at 1,611-17 ft., and main pay at 1,660-62 ft. Same company is starting a north offset in 3 Tribal, and Valentine M. Kirk is starting a south offset on Stanolind lease. Tank-car shipments out of Maverick Springs since last August, when field was opened after being shut in for 18 years, was in excess of 103,000 bbl. Husky Oil Co., operating the Continental lease, is building 10,000-bbl. tank at Riverton. A 6-in. pipe line is being laid to the railroad loading racks.

SUMMARY OF COMPLETIONS

Colorado

	No.	Bbl.	Footage
Oil wells: Fields	1	50	1,050

Wyoming

	No.	Bbl.	Footage
Oil wells: Fields	2	727	2,790

Montana

	No.	Bbl.	Footage
Oil wells: Fields	2	13	3,525
Gas: Fields	8	*8.9	12,434
Dry holes: Fields	1		910
Total	11		16,869

*Million cu. ft.

Listed among the Montana gas completions were three completions in the Cedar Creek field just across the line in North Dakota, all for the Montana-Dakota Utilities Co., which is conducting an extensive drilling campaign for shallow gas. The Mondakota Development Co. 1 Sergeants, in the same area, had salt water and was abandoned. The Ed Reagan wildcat northwest of Cut Bank, was a temporary completion for 6,000,000 cu. ft., but may be deepened. Kevin-Sunburst had two completions in Big West 6 Ellingson for 10 bbl., and Prevol & Shay 7 Government for 3 bbl. The other gas wells included four in the Bowdoin field for the Montana-Dakota Utilities Co.

R. G. Parrant 1 Holbrook, C SW NE 2-36n-3w, which opens a pool to the northwest of Kevin-Sunburst, cemented the 3-in. at 2,055 ft., and is preparing for a pumping test. On a swabbing test it made 30 bbl. of high-gravity oil.

A. L. Greer is starting test in West Axial basin in C 24-5n-94w, Moffat County, Colorado, to go to Sundance at 2,000 ft. Location is 1½ miles northwest of Shaffer 1 Rolapp, SE SE 19-5n-93w, abandoned in 1923 at 2,955 ft. with water in the Dakota, topped at 2,924 ft., and 3 miles southeast of Hogan 1 State, NE NE 16-5n-94, drilled in 1924 to the top of the Morrison at 1,212 ft.

MONTANA COMPLETIONS

Cedar Creek, Bowman County, North Dakota: Montana-Dakota Utilities 157 Government, SW NE 2-130-107, 200,000 cu. ft. gas, Eagle sand 1,180-1,450 ft., R.P. 405 lb.

Montana-Dakota Utilities 156 Government, NE NE NW 2-130-107, 280,000 cu. ft. gas, Eagle sand 1,200-1,450 ft., R.P. 405 lb.

Montana-Dakota Utilities 158 State, SW SW SW 36-131-107, 125,000 cu. ft. gas, Eagle sand 1,375-1,600 ft., R.P. 411 lb.

Cedar Creek, Fallon County: Mondakota Development Co. 1 Sergeants, SW SW SW 32-8n-60, dry at 910 ft., water in Judith River at 860-910 ft.

Cut Bank, Glacier County: Ed Reagan 1 Tribal-194, CEL SE NE 22-37-7w, 6,000,000 cu. ft. gas in Madison at 3,869 ft., acidized four times with total of 5,000 gal., may be deepened later.

Kevin-Sunburst, Toole County: Big West 6 Ellingson, SW SW SE 14-35-3w, pumped 10 bbl. from contact 1,748-51 ft., 2,000 gal. acid, T.D. 1,752 ft.

Prevol & Shay 7 Government, NE NE SE 10-35-3w, pumped 3 bbl., 500 gal. acid at 1,773 ft.

Bowdoin, Valley County: Montana-Dakota Utilities 637 Swanson, Lot 5, 24-32-34, 802,000 cu. ft. gas, Bowdoin sand 710-60 ft. and Phillips sand 815-960 ft.

Montana-Dakota Utilities 635 Martin, SE NW 25-32-34, 324,000 cu. ft. gas, Bowdoin sand at 790-896 ft., and Phillips sand at 900-1,057 ft., T.D. 1,095 ft.

Montana-Dakota Utilities 636 Kemp, NE NE 25-32-34, 396,000 cu. ft. gas, Bowdoin sand at 818-80 ft., and Phillips sand at 950-1,055 ft.

Montana-Dakota Utilities 638 Keystone, Lot 2 (SW NW) 19-32-35, 734,000 cu. ft. gas, Bowdoin sand at 705-50 ft. and Phillips sand at 810-940 ft.

MONTANA DRILLING REPORT

Big Horn County: Midland Empire Oil 1 Sunray, NW NW SE 34-6s-32e, spudded, first report, Soap Creek.

Cascade County: Bushford Pet. Synd. 1 Shannon-Roberts, C SW NE 12-20n-1e, T.D. 3,312 ft., preparing to run 3-in. and test show oil in lime.

Carbon County: Miracle Oil 2 Government, CWL NE SE 3-6s-23e, drilling 2,336 ft., 5⅞-in. at 1,570 ft.

Fallon County: Carter 1 Northern Pacific Unit, C SE SW 19-4n-62e, T.D. 5,820 ft., fishing.

Flathead County: Hoer-Jensen 1 Sheriff, C NW NW 24-30n-21w, drilling 291 ft.

Garfield County: California Co. 4 Charles, C SE NW 21-15n-30e, drilling plug on 8¼-in. cemented at 4,718 ft.

Glacier County: Ralph N. Davis 1 Tribal, NE NE NE 25-32n-6w, rig on ground, first report.

Texas 2 Jones, C SW SE 6-33n-5w, cemented 10¾-in. at 505 ft., top Colorado 483 ft.

Kulberg Oil 1 Tribal, NE NE NE 24-32n-6w, spudded.

A. R. Pardue 2 Tribal-186, SW NE NE 19-32n-5w, drilling 390 ft., top Colorado 370 ft.

Glacier Prod. 6 Bonnet, CSL SW NE 4-32n-5w, cemented 10¾-in. at 587 ft., top Colorado 557 ft.

Hill County: A. B. Cobb 1 Government, SE SE NE 19-27n-15e, drilling 4,016 ft.

Edwards & Callison 1 Hansen, SW SE NW 25-33n-15e, cemented 7-in. on bottom at 1,205 ft.

Liberty County: Montana-Dakota Utilities 1 Oswood, C NE SW 18-35n-4e, drilling 510 ft.

Teton County: R. C. Tarrant 1 Kellogg, SW NW NE 33-27n-5w, drilling 2,550 ft.

Toole County: Big West 1 Carlson, NE NE NE 22-35n-3w, drilling 760 ft., first report.

Silver Oils 4 Haskins, SE NE NE 25-36n-2w, drilling 320 ft., first report.

Superior Pet. 4 Haugen, SE NE NE 11-35n-3w, T.D. 1,583 ft., standing 650 ft., 38-gravity oil in hole, no test.

Huso Brothers 2 Ellingson, C SE SE 14-35n-3w, T.D. 1,769 ft., acidized 500 gal., no results, standing.

J. H. Agen 16 Goeddertz, CNL SE NW 23-35n-3w, water at 1,762 ft., P.B. to 1,747 ft., 40 and 100-qt. shots, preparing to acidize.

Valley County: Montana-Dakota 644 Robinson, C NE SW 15-32n-33e, T.D. 102 ft., waiting on rotary.

Montana-Dakota 634 Kippen, C SW SW 20-32n-34e, T.D. 101 ft.

Montana-Dakota 643 Bell, C NE SW 32-32n-34e, T.D. 100 ft.

Montana-Dakota 640 McDermott Realty, C SE NE 8-32n-34e, T.D. 103 ft.

Montana-Dakota 639 Occidental Life, C SW SW 11-32n-34e, drilling 800 ft., 5½-in. at 790 ft.

Montana-Dakota 642 First National Bank, C NW SE 7-32n-34e, T.D. 177 ft.

Montana-Dakota 641 Bankers Trust, C SW SE 5-32n-34e, T.D. 100 ft.

Montana-Dakota 650 Sudderock, C SW SE 24-32n-33e, T.D. 102 ft.

Montana-Dakota 649 Kippen, C NW NE 25-32n-33e, T.D. 102 ft.

WYOMING COMPLETIONS

Maverick Springs, Fremont County: Indian Oil 2 Tribal, SW SW NW 23-6n-2w, 570 bbl., in base Embar at 1,663 ft.

La Barge, Sublette County: Texas 1-K Government, NW SW SW 27-27-113, flowed 157 bbl. in 17 hr. at 1,135 ft.

WYOMING DRILLING REPORT

Big Horn County: Ohio 2-A Hoskins, SE SE SE 15-56n-97w, drilling 2,816 ft.

Campbell County: Continental-Texas Gulf 1 Knapp, NE SW SE 4-56n-69w, drilling 4,253 ft. in base of Madison.

Carbon County: Sinclair-Wyoming 5-C Mahoney, C NW SE 34-26n-88w, T.D. 4,566 ft., P.B. to 4,458 ft., waiting.

Sinclair-Wyoming 5-F Mahoney, C NE NW 34-26n-88w, rigging up rotary.

Sinclair-Wyoming 22-A Wertz, CEL SE SE 1-26n-90w, T.D. 4,557 ft., set whipstock at 3,400 ft., drilling in new hole at 3,425 ft.

Fremont County: Indian Oil 3 Tribal, NW SW NW 23-6n-2w, rigging cable tools, first report.

Valentine M. Kirk 3 Tribal, NW NW SW 23-6n-2w, drilling 311 ft., 12½-in. at 69 ft., first report.

Sinclair-Wyoming 3-A Unit, NW NW NE 3-33n-92w, cellar, first report, Muskrat gas field.

Lincoln County: H. Metzgar No. 1, CEL SW SW 32-

(Continued on Page 95)

Flank Exploration Extended To Old Vinton Dome

By F. L. SINGLETON

NEW ORLEANS, La., June 16.—Flank development around known salt-dome structures which has highlighted Louisiana Gulf Coast development during the past several months was extended to the old Vinton dome, Calcasieu Parish, where two deep tests are scheduled to be drilled by the Union Sulphur Co. The company paid $70,000 cash for the Matilda Gray 500-acre leases centering in 4 and 5-11s-12w, on the south and southwest flanks, and drilling of the first test is to be started at an early date.

SUMMARY OF COMPLETIONS

	No.	Bbl.	Footage
Oil wells: Fields	17	4,287	128,544
Dry holes: Fields	3	.....	19,274
Wildcats	1	.....	10,620
Total	21	.....	158,438

Vinton is one of the few remaining old known salt structures in which production has not been revived by deeper exploration. The structure was proven productive in 1910 and up to the present time nearly 45,000,000 bbl. of oil have been recovered. This production has been produced from the Pliocene, Miocene and Oligocene sands at intervals from 1,800 to 3,500 ft. At a recent date there were 56 wells on production having a daily average production of only 716 bbl.

SECTION 28 DOME.—On the north flank of the Section 28 dome, St. Martin Parish, Superior Oil Co. of California was preparing to drill deeper in 2 E. C. Stuart after running an electrical log and cutting side-wall cores at a total depth of 11,095 ft. Nine ohms resistivity, with good cut and a show of salt water was logged at 10,872-86 ft. The electrical log showed from 5 to 6 ohms resistivity with no show of oil at intervals from 10,632-10,760 ft. The well is believed to be in the top part of the Vicksburg formation.

BARATARIA.—California 7-C Fleming Plantation, the discovery well of a new sand in the Barataria field, Jefferson Parish, flowed 279 bbl. daily through a 5/32-in. choke from perforated casing at 7,620-52 ft. Location is in 15-15s-23e.

DELACROIX ISLAND.—Location for a second well was announced for the newly opened Delacroix Island field, Plaquemines Parish. The well is Texas 2 State-Delacroix Island in 3-16s-14e, about 1 mile southeast of the discovery well, recently completed as a gas-distillate producer.

WESTWEGO.—In the Westwego field, Jefferson Parish, Stanolind Oil & Gas Co. is building roadway for 1 V. A. Pitre Unit 1 in 5-13s-23e, while Reese E. Carter has derrick up for 2 Cravens in 3-13s-23e, an offset to the operator's 1 Cravens, completed several weeks ago as the first commercial producer for the structure.

POINT AU FER.—On the Point Au Fer prospect, Terrebonne Parish, where Barnsdall Oil Co. recently abandoned 1 State at a depth below 10,000 ft., the same company staked location for another test, 3 Nelson Development Co., about 4,000 ft. north of 1 Nelson Development Co. in 35-21s-11w. This will be the fourth deep test to be drilled on the prospect which has been worked extensively with geophysical instruments. Stanolind 1 Realty Operators in the South Houma area is bottomed at 11,329 ft., and is to be abandoned.

MOSS LAKE.—Tentative location for another wildcat is reported to have been made in the Moss Lake area, Calcasieu Parish, by Daryl Davis et al on the R. Scarlet lease in 8-11s-9w. Pan American 1 Louisiana Farm & Livestock Co., in the same area, is scheduled to be spudded during the week.

BAYOU CHOCTAW.—An attempt to open flank production on the west side of the Bayou Choctaw field, Iberville Parish, is scheduled to be made during the week. No. 1 Levy in 54-9s-11e, is bottomed at 8,782 ft. where 7-in. casing was cemented preparatory to testing at 8,506-19 ft. where sand with a showing of oil was logged.

CONVENT.—Another failure was marked up for the Convent or Hester area, St. James Parish, as Continental 3 Realty Operators was abandoned at a depth of 9,350 ft. with no showings of oil or gas reported. This is the first test to be drilled on the structure in several months. Approximately seven tests have been drilled and only small production has been developed.

WILCOX TEST.—Location for a Wilcox test was announced for Vernon Parish by Fohs Oil Co., and material will be moved in at an early date. The well is 1 Norman Mills, northwest of Leesville in 31-3s-11w. The company controls a block of several hundred acres and the area has been worked extensively with geophysical instruments.

PORT ALLEN.—Amerada 2 Wilberts Sons Lumber & Shingle Co., approximately 1,100 ft. east of the discovery well of the newly opened Port Allen field, West Baton Rouge Parish, is drilling in the discovery pay below 9,400 ft. after logging showings of oil and gas in a new sand section. Sand showing oil was cored at 9,277-95 ft., while broken sand and shale showing oil was cored at 9,388-9,459 ft. The discovery well was completed through perforated casing opposite oil sand at 9,610-20 ft.

LOUISIANA GULF COAST COMPLETIONS

WILDCATS

Terrebonne Parish: Barnsdall 1 State, dry, T.D. 10,620 ft.

FIELDS

Anse La Butte, St. Martin Parish: H. Fotiades 1 Ray, dry, T.D. 6,892 ft.

Stanolind 1 Rycade, 64 bbl., 5/32 choke, perf. casing 6,340-65 ft., T.D. 6,425 ft.

Barataria, Jefferson Parish: California 7-C Fleming Plantation, 279 bbl., 5/32-in. choke, perf. casing 7,620-32 ft., T.D. 7,655 ft.

Bayou Blue, Iberville Parish: Union Sulphur 1 Schwing Lumber & Shingle Co., dry, T.D. 5,938 ft., salt.

Bayou Boullion, St. Martin Parish: Superior 7 Rycade, dry, T.D. 6,444 ft.

Gillis, Calcasieu Parish: Fohs 7 Castle, 29 bbl., 7/16-in. choke, perf. casing 6,927-37 ft., T.D. 7,064 ft.

Golden Meadow, La Fourche Parish: Bering 1 J. A. Gravois, 194 bbl., 10/64-in. choke, perf. casing 5,434-40 ft., T.D. 5,474 ft.

Bering 7 La Fourche Realty Co., 158 bbl., 10/64-in. choke, perf. casing 5,430-36 ft., T.D. 5,490 ft.

Grand Bay, Plaquemines Parish: Gulf 15 State, 384 bbl., 5/32-in. choke, perf. casing 8,742-52 ft., T.D. 8,754 ft.

Iowa, Calcasieu Parish: Shell 33 Heyd, 631 bbl., 1/4-in. choke, perf. casing 6,970-90 ft., T.D. 9,010 ft.

Lafitte, Jefferson Parish: Texas 2 Kerner, 235 bbl., 5/32-in. choke, T.D. 10,815 ft., P.B., T.D. 8,286 ft.

La Fourche Crossing, La Fourche Parish: Mikton Oil Co. 1 Henry, 50 bbl., 15/64-in. choke, perf. casing 10,092-10,100 ft., T.D. 10,347 ft.

New Iberia, Iberia Parish: William Helis 9 Bullock, 294 bbl., 12/64-in. choke, perf. casing 6,010-50 ft., T.D. 6,144 ft.

Richie, Acadia Parish: Grubb & Hawkins 1 Ruppert, 122 bbl., 10/64-in. choke, T.D. 3,498 ft.

South Crowley, Acadia Parish: Humble 1 Nockton, 18 bbl. fluid, 10 per cent distillate, perf. casing 8,889-95 ft., T.D. 9,824 ft.

Sulphur, Calcasieu Parish: Union Sulphur 878 fee, 104 bbl., 1/4-in. choke, perf. casing 6,848-58 ft., T.D. 7,219 ft.

Sweet Lake, Cameron Parish: Pure 22 Stanolind, 232 bbl., 10/64-in. choke, T.D. 7,685 ft., P.B., T.D. 6,853 ft.

Ville Platte, Evangeline Parish: Continental 1 V. G. Fontenot, 357 bbl. distillate, 7/16-in. choke, T.D. 10,167 ft.

West Bay, Plaquemines Parish: Gulf 2 State, 864 bbl., 1/4-in. choke, perf. casing 7,135-62 ft., T.D. 7,414 ft.

Woodlawn, Jefferson Davis Parish: Union Sulphur 4 Trimble, 282 bbl., 9/64-in. choke, perf. casing 8,063-68 ft., T.D. 8,401 ft.

LOUISIANA GULF COAST DRILLING REPORT

Beauregard Parish: Atlantic 1-D Rice Land & Lumber Co., 30-4s-10w, drilling shale 9,340 ft.

Humble 1-B Edgewood Land & Logging Co., 25-6s-10w, drilling shale 10,047 ft.

La Fourche Parish: Gulf 1 State, Marchand salt dome, T.D. 3,004 ft., perf. casing 1,460-80 ft., tested gas, squeezed perf., W.O.C.

Gulf 1 State PP, 8-21s-21e, derrick.

Rapides Parish: Chamblee & Pitts 1 Lee Lumber Co.,

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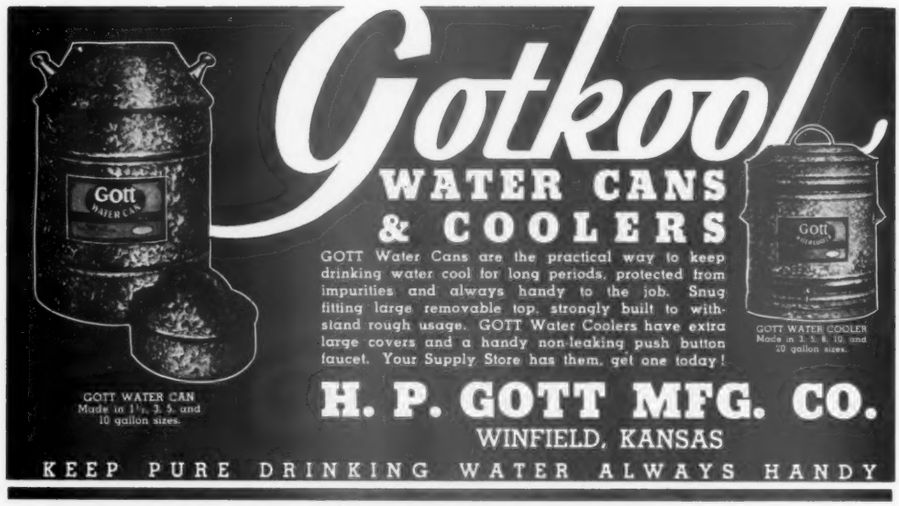
Layne-Northwest Co.	Milwaukee, Wis.
Layne-Ohio Co.	Columbus, Ohio.
Layne-Texas Co.	Houston, Texas.
Layne-Western Co.	Kansas City, Mo.
Layne-Western Co. of Minnesota	Minneapolis, Minn.
Layne-Bowler New England Corp.	Boston, Mass.
International Water Supply	London, Ontario, Can.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6-5n-3e, old T.D. 4,520 ft., sidetracked while reaming, drilling shale 2,634 ft.

Orleans Parish: W. T. Burton 2 L. & N. R. R., 17-11s-15e, drilling shale 7,950 ft.

Plaquemines Parish: Phillips 1 L. L. & E., 38-20s-29e, drilling shale 6,320 ft.

St. Mary Parish: Harbor 1 State, 14-16s-9e, drilling shale 6,000 ft.

Humble 1 E. F. Marin, Bayou Sale prospect, 16-16s-9e, drilling shale 12,515 ft.

Oklahoma Fields

(Continued from Page 72)

Kemp 1 McLaurey, SE SE SW 28-17-5, first report.

Logan County: Continental 1 Lenigar, SW SE SW 17-15-3w, base Pennsylvanian and top chat, 5,895 ft., Hunton 5,905 ft., Sylvan 5,970 ft., Viola 6,080 ft., dolomite 6,120 ft., cored stained dolomite 6,183-6,201 ft., Wilcox 6,219 ft., cored stained dolomitic sand 6,240-44 ft., cored well-saturated sand 6,244-56 ft., Marshall zone 6,252 ft., drilling 6,306 ft.

Muskogee County: Pine 1 Lacey & Steele, SE NE NW 24-13-17, drilling 1,709 ft.

Noble County: Samedan 1 Briggs, SE SE SW 29-21-1w, second Wilcox 5,065-75 ft. T.D., P.B. 3,560 ft., perf. and had good show gas, S.D. for weather.

Superior 1 Faubian, SE SW SE 16-22-1, first Wilcox 4,732 ft., D.S. test 4,743 ft., filled up 3,060 ft. fluid in hole, estimated 50 per cent oil, electrical log showed 6 ft. saturated Wilcox sand on top and rest showed water, cored 4,743-47½ ft., recovered spotted stained Wilcox, cored sandy shale 4,761-69 ft., second Wilcox 4,880-94 ft. T.D., 7-in. 4,922 ft., to perf. and test.

AVERAGE DAILY PRODUCTION

LEADING OKLAHOMA FIELDS

	June 14
Allen	4,600
Billings	6,225
Burbank	7,925
South Burbank	7,425
Balance Osage	18,300
Blackwell district	3,600
Bristow-Slick	6,475
Chandler	900
Crescent	1,675
East Cromwell	2,350
Cromwell	2,800
Cumberland	6,700
Cushing-Shamrock	8,950
Dill	5,250
Duncan	3,550
Edmond	3,450
Fish	3,875
Fitts	12,650
Jesse	1,975
Graham-Fox	2,275
Healdton	8,500
Hewitt	10,500
Keokuk	2,750
Konawa	1,000
Lucien	5,750
Moore	925
Northeastern counties	17,250
Oklahoma City	81,650
Olympic	1,700
Ramsey	3,850
Sasakwa	1,275
Sholem-Alechem	2,350
Seminole district:	
Bowlegs	6,150
Carr City	2,225
Dora	1,150
Earlsboro	3,850
East Earlsboro	1,625
South Earlsboro	525
Little River	6,150
East Little River	600
Mission	1,250
Seminole	6,225
East Seminole	950
Searight	1,700
Total Seminole	32,400
St. Louis-Pearson	21,650
Tatums-Tussy	5,400
Tonkawa-Garber-Thomas	3,650
Wewoka	2,000
Yale-Jennings	3,275
Total Oklahoma	415,550

Okfuskee County: Halher & Sexton 1 Hilderbrandt, NW NE NE 19-10-11, drilling 450 ft.

Alma 1 Replogle, NW SW NW 14-11-10, lower Cromwell 3,171-89 ft., deepened to 3,215 ft., flowed 40 bbl. oil and 150 bbl. water in 24 hr., testing.

Mico 1 Curry, NW SE NW 17-12-8, first report.

Texas 1 McKernan, N½ NW SW 15-12-9, Senora lime 2,030 ft., Brown lime 2,780 ft., Booch zone 2,880 ft., Gilcrease zone 3,150 ft., Wapanucka-Cromwell zone 3,283 ft., cored hard sand with odor and stain 3,286-96 ft., cored soft stained sand 3,296-3,304 ft., T.D. 3,304 ft., 5-in. 3,290 ft.

Osage County: Keener 1-A Osage, SW SW NW 10-22-11, running 8-in. at 720 ft., T.D.

Black Jack 1 Osage, NE NE SW 29-25-7, recovered fish at 1,225 ft., and drilling ahead.

Pawnee County: Harwell 1 Isaacs, NW SW SE 25-20-6, Big lime 2,390 ft., Oswego 2,470 ft., Skinner 2,675-90 ft., stain and salt water, drilling 2,701 ft.

Sand Springs 1 Launer, SW SW SW 25-20-6, drilling 2,836 ft.

Payne County: Anderson-Prichard 1 McGuire, SE SE NW 20-18-1, Sylvan 5,053 ft., Viola 5,139 ft., dense 5,180 ft., dolomite 5,190 ft., cored hard dry dolomite 5,195-5,214 ft., coring ahead.

Pontotoc County: Bob Cason 1 Adcock, SE NW NE 21-4-6, first report.

Pottawatomie County: Stanolind-Amerada 1 Rowan, NE NW SW 20-9-4, first report.

Sharpe 1 Billington, NW SE SE 21-9-4, Sylvan 4,400 ft., Viola 4,490 ft., dense 4,550 ft., dolomite 4,585 ft., Wilcox 4,636 ft., cored dense lime 4,545-52 ft., cored slightly stained dolomite and saturated sand 4,638-48 ft., electrical log showed good porosity 4,632-40 ft., T.D. 4,640 ft., 5½-in. 4,634 ft.

Lippert 1 Rosebush, NE SE SW 34-10-3, drilling 1,950 ft.

Seminole County: Helmerich & Payne 1 School Land,

NW NW NE 16-7-5, Calvin 2,795 ft., show oil, Earlsboro 3,230-90 ft., dry, Brown lime 3,395 ft., Caney 3,450 ft., Mayes 3,620 ft., Woodford 3,725 ft., Viola 3,990 ft., dense 4,050 ft., T.D. 4,062 ft., run casing.

Paul McIntyre 1 Honning, SW SW SE 2-9-7, first report.

Winona 1 Heller, NE NE NE 25-10-7, first report.

Mico 1 Kidd, NE SW SE 33-10-8, Cromwell 3,716 ft., T.D. 3,767 ft., 5½-in. 3,400 ft., to test Gilcrease at 3,398 ft.

Shell 1 Keyes-B, SW SW NE 22-11-8, Woodford 4,057 ft., Hunton 4,084 ft., show oil 4,128-50 ft., drilling 4,170 ft.

Wagoner County: Minter 1 McGinniss, NE SE NE 30-18-17, drilling 850 ft. in lime.

Southwestern

Atoka County: Matson 2 Rowland, SW NE NE 18-3s 10e, broken sand 487-521 ft., T.D., run 5-in. casing.

Caddo County: Ray Stephens 1-A Johnston, NW NE NW 18-5-8w, first report.

Texas 2 Smith, SE NW 2-5-12w, D.S. test 3,388 ft., flowed 125 bbl. in 55 min. from Simpson bromide, blew out between 7-in. and 13⅜-in. casing from Hunton, estimated 25,000,000 cu. ft. gas, killed well and cementing off.

Olson 1 Ka-Way-Kla, SE NE NW 28-6-11w, first report.

Choctaw County: Carter 1 Shull, SE SW NE 20-6s-18e, drilling 579 ft.

Comanche County: Cooper 1 Bowen, SE NW SE 29-2-9w, T.D. 1,615 ft., 7-in. 1,615 ft.

Jackson County: Fain Porter 1 Wilson, SE SW 30-2-22w, top Strawn 5,058 ft., drill pipe stuck.

Magnolia 1 Watson, SW SE NW 12-7s-2e, water sands 640-740 ft., 810-65 ft., and 892-925 ft.; drilling lime 1,230 ft.

Johnston County: Baldwin & Reed 1 Davis, S½ SW NW 8-2s-8e, first report.

Kiowa County: Thomasson 1 Baker, NW NE NW 7-6-18w, first report.

Hughes 1 Dugger, NE SW SW 14-6-18w, first report.

Love County: Batson 1 Walden, NE NW NW 34-6s-2e, sand showing oil 1,118-27 ft., 1,188-1,200 ft., and 1,520-83 ft., shale and sand 1,612-86 ft., drilling 1,740 ft.

Stephens County: Helmerich & Payne 1 Cryer, SE NE SW 33-2-5w, T.D. 6,005 ft., electrical log to 6,000 ft., S.D.

Skelly 4 Robberson, NE NE 35-1s-5w, cemented perf. 5,240-46 ft., T.D. 7,808 ft., P.B. 7,580 ft., perf. 7,200-15 ft., 7,140-90 ft., and 7,120-35 ft. for bromide sand zone, set 2-in. tubing with packer at 7,093 ft., after cleaning mud and water for 20 min., flowed 286 bbl. oil with mud in 15 hr., packer leaking mud, est. 500,000 cu. ft. gas, 575 lb. pressure on tubing, to pull tubing and retest.

Indiana Fields

(Continued from Page 91)

Dubois County: J. C. Howes 1 Eckert, SW NE NW SW 14-3s-3w, S.D. 527 ft.

Gibson County: Wickwire et al 1 Tennes, SW SE SW 8-2s-12w, drilling 1,200 ft.

Ill.-Ind. Prod. 1 Stratman, NW NW 14-4s-10w, spud, first report.

Knox County: Midwest Dev. 1 Schaller, SE SE SE 23-2n-11w, spud, first report.

Monroe County: Terry Deskins 1 Thompson, NE NW SE 18-9n-1e, S.D. 805 ft.

Terry Deskins 1 Cowling, SW SW NW 34-7n-1e, S.D. 1,600 ft.

Orange County: Shelbourn 1 Oldham, NW NW NW 12-1s-1e, first report, drilling 1,400 ft.

Parke County: H. N. Oakley 1 Montgomery, S½ N½ NW 20-14n-8w, old well drilling deeper, old T.D. 1,600 ft., drilling 1,740 ft.

Perry County: C. E. Dice 1 Stroble, NE SE NW 5-6s-3w, set 10-in. 30 ft., drilling 380 ft.

Pike County: Southwestern Dev. 1 Carpenter, E½ SW 19-1n-6w, first report, Glen Dean 664 ft., 6-in. 664 ft., sand 696 ft., drilling 704 ft.

Posey County: Mahutska Oil 1 Elliott, SW NW NW 5-4s-13w, T.D. 2,653 ft., P.B. 2,490 ft., 7-in. 2,465 ft., waiting on cement.

Hollandsworth 1 Egli, NE NE SW 19-6s-12w, T.D. 2,368 ft., Cypress 2,350-68 ft., 5½-in. 2,345 ft., drilling plug.

Venoble-Myles et al 1 Graulich, SW NE SW 13-7s-13w, set 10-in. 135 ft., waiting on cement.

Rossi et al 1 Walter Reifert, NW NW SE 19-6s-12w, Location, first report.

Rossi et al 1 Dickhaut, SE SW NW 19-6s-12w, first report, rigging up rotary.

Less et al 1 Schrieber, NW SW SW 24-6s-13w, first report, 10-in. 50 ft., Chester 1,650 ft., Degonia 1,700 ft., Clore 1,735 ft., drilling 1,855 ft.

Yingling et al 1 Wilson, SE NE NW 34-5s-14w, location, first report.

Yost et al 1 Allyn, NW SE SW 14-7s-13w, first report, 10-in. 130 ft., drilling 1,400 ft.

Randolph County: Owen & Stevenson 1 Frasier, NE SE 9-19n-13e, location, first report.

Spencer County: Troy Refining 1 Grass, S½ SE NE SE 11-6s-4w, S.D. 893 ft.

Jesse Wilson et al 1 McCoy, NE NE NE 12-7s-8w, S.D. 700 ft.

J. B. Miller et al 1 Dooley, NW NE NW 19-7s-7w, T.D. 917 ft., will run 6-in.

Louis Wade et al 1 Squire, SE SW SW 7-7s-6w, Kincaid 761 ft., Degonia 800 ft., Clore 828 ft., Menard 910 ft., Vienna 1,025 ft., Tar Springs 1,029 ft., Glen Dean 1,118 ft., Hardinsburg 1,170 ft., Golconda 1,189 ft., Barlow 1,308 ft., Cypress 1,335 ft., 6-in. 1,373 ft., S.D. 1,373 ft.

Hedges et al 1 Ebley, SE SE NW 7-7s-7w, set 10-in. 60 ft., 8-in. 63 ft., S.D. 300 ft.

Warrick County: Yankeetown Dev. 1 Taylor, SW SW NW 10-7s-8w, S.D. 1,790 ft.

Ken-Penn Oil Corp. 1 Metz, SE SW NW 10-6s-7w, location, first report.

Rocky Mountain Area

(Continued from Page 92)

19n-116w, suspended at 250 ft., rotary moved off, will install cable-tool rig later.

H. C. Harris 1 Government, SE NW NW 23-21n-117w, drilling 3,381 ft.

K. M. P., Inc., 1 State, NE NE NE 36-25½-115w, drilling 3,003 ft.

Natrona County: General Petroleum 31-27-P, NW NE NW 27-35n-77w, coring in Shannon sand at 4,560 ft., 5½-in. at 4,557 ft.

Stanolind 4-SD-3, NE NW SW 26-40n-79w, T.D. 2,959 ft., cemented 5-in. on top Sundance.

Niobrara County: Continental 13 Rohlff, SE SE SE 31-36n-65w, T.D. 5,273 ft., 7-in. at 5,190 ft., first Leo at 5,020-55 ft.

Continental 3-A Schuricht, C SW NW 5-35n-65w, T.D. 5,267 ft., top Leo 5,020 ft., cemented 5-in. at 5,220 ft.

Ohio 4 R. & C., NE SW 32-36n-65w, T.D. 5,203 ft., cemented 7-in. at 5,201 ft., perf. 100 shots at 5,104-77 ft., testing.

Park County: Texas 5 Sonners, SE NE NE 30-51n-100w, T.D. 3,460 ft., 8⅝-in. at 3,288 ft., acidized 2,000 gal., est. 400 bbl., installing pump.

Stanolind 21-X Rosenberg, NE SW NW 25-58n-98w, T.D. 2,785 ft., in Tensleep, showing saturation, making D.S. test.

Sweetwater County: Rocky Mountain Drilling 1 State, SW SW SW 36-20n-104w, drilling 6,212 ft. in Embar, will go to Tensleep.

COLORADO COMPLETIONS

Rangely, Moffat County: Raven Oil & Refining Co. 32 Government, CSL NW NE 31-2n-102w, 50 bbl., from fractured zone in the Mancos shale at 1,045-50 ft.

COLORADO DRILLING REPORT

El Paso County: F. F. Hintze 1 State, CEL SE SE 13-11s-60w, drilling 2,150 ft., carrying 6⅝-in., est. 300,000 cu. ft. gas at 1,980 ft.

Moffat County: Mountain Fuel Supply 8-A Wilson, C SE NE 22-12n-100w, T.D. 2,534 ft., testing sand at 2,238-55 ft. through perf., made 89 bbl. in 24 hr.

Mountain Fuel Supply 3-A Musser, CNL NW SW 5-11n-97w, T.D. 5,700 ft., recementing to shut off water and test.

Pueblo County: E. A. Scriven 1 Kieffer, SE SW 21-21s-66w, S.D. 106 ft.

Rio Blanco County: Texas-California 6 Unit, NW NE SE 27-3n-94w, drilling, coring, and testing in Morrison sand at 6,305 ft.

Raven Oil & Ref. 33 Government, NE SW NE 31-2n-102w, drilling 521 ft., Rangely field, first report.

John Bockhold 1 Gentry, Lot 8, 3-1n-102w, drilling 734 ft., show oil and gas at 300 ft.

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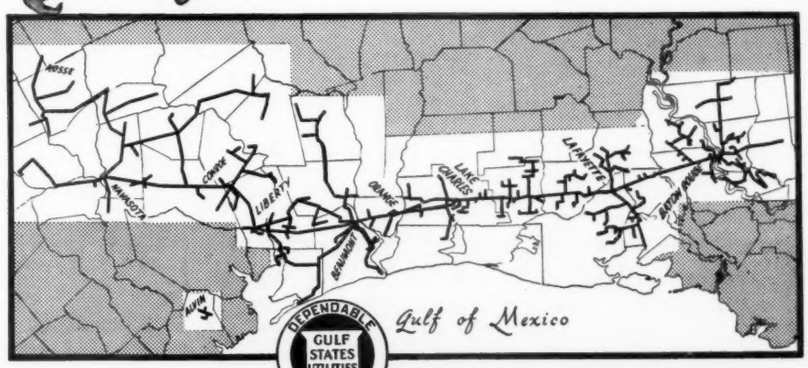

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MICHIGAN OPERATIONS

Osceola Play in Full Swing Following Big Completions

By OTTO C. PRESSPRICH

SAGINAW, Mich., June 16.—The biggest oil-development program in Michigan since last summer's Adams-Arenac north pool was in full swing this week north of Reed City in Osceola County. Meanwhile a second natural-gas field was indicated for Isabella County.

A half-dozen drilling rigs were moved into the Osceola area and surveys for as many more tests were being completed as the result of recent completions by Pure Oil Co. and Weber Oil Co. of two big wells with flows up to 140 bbl. an hour. The Weber test was deepened to the heavy pay and the Weber 1 Gabel, first producer in the field, completed last October, being deepened at week's end, was within a few feet of the heavy-pay zone.

Besides promising the first major new field for Michigan this year, oil men attached importance to the Osceola development because of the potential effect it will have upon exploration in nearby Roscommon and Missaukee counties, which have been wildcatted sporadically but without result in the past few years.

Charles W. Teater of Saginaw has acquired large blocks of acreage in the Reed City area, ranking among the big four with leases in the new center of activity. Pure, Weber and Gulf Refining are the others. Each has plans under way for several tests.

In addition to the Lincoln Township splurge, Osceola's Sylvan Township also is being watched. It is there that Turner Petroleum Co. 1 Pritchard wildcat is drilling near 2,000 ft. after encountering gas flow estimated at near 4,000,000 cu. ft. in the Michigan stray. Other Osceola wildcats just started include C. L. Maguire, Inc., 1 Watson, in Hersey Township, and Chapman Oil Co. 1 Seaver in Middle Branch.

SUMMARY OF COMPLETIONS

	No.	Bbl.	Footage
Oil wells:			
Allegan County	2	65	2,706
Bay County	1	18	1,527
Clare County	1	30	3,868
Monroe County	1	40	2,144
Ottawa County	1	100	1,876
Van Buren County	1	185	1,284
Gas wells:			
Isabella County	2	*4.47	2,588
Dry holes:			
Allegan County	1	.....	1,605
Cass County	1	.....	1,050
Clare County	1	.....	3,852
Monroe County	1	.....	2,131
Ottawa County	1	.....	1,641
Saginaw County	1	.....	3,158
Van Buren County	3	.....	3,802
Total	18	.....	33,232

*Million cu. ft.

Gas Field in Sight in Isabella County

Completion of Belvidere Oil Co. 1 Pease in Section 21, Fremont Township, Isabella, in Michigan stray at 1,256 ft. gave the Mount Pleasant section of the state promise of another gas field. Pease gas flow, nearly 1,500,000 cu. ft. a day, provides the first commercial gas well in the Winn area, where both oil and gas activity has been under way in recent years. Belvidere plans another well a mile east of the Pease discovery, and L. & S. Drilling Co. announced plans for at least two more tests of the Deerfield-Isabella gas field. L. & S. meanwhile reported its 1 Winesburg gas production at 3,040,000 cu. ft. a day.

SOUTHWEST MICHIGAN. — Development prospects brightened somewhat as Fortney Oil Co. completed 1 Pullin in Section 1, Bloomingdale, Van Buren, between the old Bloomingdale and Trowbridge pools. Production naturally in Traverse was reported as 185 bbl. a day, with some water. Three follow-up tests are scheduled. Three other tests, in Waverly, Geneva and Columbia, were completed as dry holes. Two more small producers were completed in Allegan's Trowbridge, but an Overisel test was dry and in Tallmadge-Ottawa a 100-bbl. test was completed while a Jamestown hole failed to get production.

SAGINAW BAY AREA. — Another effort to develop production in Lakefield, Saginaw County, failed when Hogan Brothers 1 Watson wildcat was given up a dry hole at 3,156 ft. after topping Dundee at 3,109 ft. Gulf Refining Co. is drilling into Niagaran limestone in its 1 Bateson, Michigan's deepest test. With Salina salt and bad gas pockets cemented off, drillers expected faster action toward the 9,000-ft. objective. Last reports were that the hole was near 8,300 ft., more than 500 ft. below the previous depth when an explosion halted operations. United Drillers 4 Kircher, completed in Berea at 1,527 ft. in Bay's Monitor Township, was rated at 18 bbl. after nitro charge.

CLARE COUNTY. — While American Drilling Co. 1 Sprung, in Redding, was completed for 30 bbl., the Union Drilling Co. 1 O'Brien wildcat in Summerfield was completed as a dry hole.

PERMITS. — The state Conservation Department announced issuance of 23 gas and oil permits during the week, bringing the total for the year to 359. Allegan County led with five, followed by Ottawa with four, Arenac with three, Osceola, Montcalm, Clare and Van Buren with two each, Kent, Midland and Cass each with one.

AVERAGE DAILY PRODUCTION

	Bbl.
Temple	6,902
Buckeye	1,900
Walker	4,395
Van Buren Co.	2,810
Allegan Co.	4,415
Wise	1,178
Adams	3,812
Winterfield	3,005
Reed City	1,900
Total Michigan	38,050

MICHIGAN COMPLETIONS

Allegan County

Overisel Township: H. C. Nelson 1 Hulst, SW NW NW 12-4n-14w, dry, T.D. 1,605 ft.

Trowbridge Township: Gentry Engineering Co. 1 Brown, NE SW NE 20-1n-13w, 40 bbl., acid, T.D. 1,335 ft.

L. C. Sleep 2 Bridgeman, SE SW NW 29-1n-13w, 25 bbl., acid, T.D. 1,371 ft.

Bay County

Monitor Township: United Drillers & Producers 4 Kircher, SW NE NE 3-14n-4e, 18 bbl., nitro shot in Berea, T.D. 1,527 ft.

Cass County

Silver Creek Township: Cass County Oil Co. 1 Fordyce, NW NE NW 23-5s-16w, dry, T.D. 1,050 ft.

Clare County

Redding Township: American Drilling Co. 1 Sprung, S½ NW SW 29-19n-6w, 30 bbl., acid, T.D. 3,868 ft.

Summerfield Township: Union Drilling Co. 1 O'Brien, S½ SW SE 5-20n-5w, dry, T.D. 3,852 ft.

Isabella County

Deerfield Township: L. & S. Drilling Co. 1 Winesburg, SE SW SE 19-14n-5w, 3,040,000 cu. ft. natural gas, T.D. 1,332 ft.

Fremont Township: Belvidere Oil Co. 1 Pease, SE SE NW 21-13n-5w, 1,430,000 cu. ft. natural gas, T.D. 1,256 ft.

Monroe County

Dundee Township: L. S. Braily 4 Roe, SW SE NW 30-6s-6e, dry, T.D. 2,131 ft.

Summerfield Township: Van Oil & Gas Co. 4 Montry, NW NE NW 31-6s-6e, 40 bbl., nitro shot, T.D. 2,144 ft.

Ottawa County

Jamestown Township: W. L. McClanahan 1 Kiekover, SE SE NW 32-5n-13w, dry, T.D. 1,641 ft.

Tallmadge Township: J. C. Newell 3 Rapp, NE SE SW 23-7n-13w, 100 bbl., acid, T.D. 1,876 ft.

Saginaw County

Lakefield Township: Hogan Bros. 1 Watson, SE SE SE 13-11n-1e, dry, T.D. 3,158 ft.

Van Buren County

Bloomingdale Township: Fortney Oil Co. 1 Pullin, SW SW NW 1-1s-14w, 185 bbl., natural, with water; T.D. 1,284 ft.

Columbia Township: Clapsaddle & Harris 1 Fleckenstein, SE NE SW 23-1s-15w, dry, T.D. 1,595 ft.

Geneva Township: Cribbet & Shaffer 1 Pipfer, NE SW NE 4-1s-16w, dry, T.D. 1,098 ft.

Waverly Township: Twin Drilling Co. 1 Culver, SW SW NE 30-2s-14w, dry, T.D. 1,109 ft.

Oklahoma's West Hewitt Pool to Be Prorated

The West Hewitt field of Carter County, Oklahoma, will be brought under state proration effective July 1 and rated as a class B pool, the state Corporation Commission ruled in an order released this week. The order does not fix well spacing for the field, although this was one of the major points in the petition by Gibson & Jennings, Inc., discoverer of the field. The order applies to the Ward sand zone at 1,900-2,100 ft.

A 50-bbl. per well marginal flow is to be granted with all above that being prorated on a percentage basis. Tests must be made through 2½-in. tubing.

It's a Fact — Johnston

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CANADIAN FIELDS

Conservation Board Moves To Save Turner Valley Gas

By VICTOR LAURISTON

CHATHAM, Ont., June 16.—Crude production from all Alberta fields in April totaled 785,273 bbl., or 26,176 bbl. daily, an increase in daily production of 115 bbl. over March 1941, and 6,302 bbl. over April 1940. Natural gasoline from Turner Valley absorption plants totaled 84,349 bbl., or 720 bbl. daily, 130 bbl. less than March and 19 bbl. more than April 1940.

April output included: Turner Valley shallow crude, 468 bbl.; naphtha, 2,100 bbl.; limestone crude, 780,247 bbl.; Red Coulee light crude, 1,007 bbl.; Wainwright heavy crude, 631 bbl.; Del Bonita, 212 bbl. Lloydminster, 69 bbl.; Steveville, 208 bbl.; Vermilion, 331 bbl.

Natural-gas production in April was 5,227,146,000 cu. ft., or 174,238,000 cu. ft. daily. Gas actually marketed was 2,213,835,000 cu. ft., including: Turner Valley, 1,636,266,000 cu. ft.; Viking-Kinsella fields, 280,026,000 cu. ft.; Medicine Hat-Redcliff field, 271,869,000 cu. ft.; other fields, 25,674,000 cu. ft. Turner Valley waste gas in April was 3,004,051,000 cu. ft.

Turner Valley gasoline-absorption plants in April processed 2,530,274,000 cu. ft. with a recovery of 21,592 bbl. of natural gasoline.

Crude-petroleum stocks in Alberta as of May 1 totaled 471,077 bbl., a decrease of 27,748 bbl. from April 1, and a decrease of 165,834 bbl. from May 1, 1940. Refined-petroleum stocks as of April 1 were 1,547,059 bbl., an increase of 154,125 bbl. over March 1 and a decrease of 57,364 bbl. from April 1, 1940.

Turner Valley Gas Quotas Cut; Will Curb High Gas-Oil Ratio Wells

The Alberta Conservation Board has cut gas production from the gas-cap area of Turner Valley to 59,000,000 cu. ft. daily for June, a reduction of 9,000,000 cu. ft. daily from the previous month; and has prohibited the use of gas from this area as drilling fuel.

Commencing July 1 the board plans to restrict production of crude wells with high gas-oil ratios. In April 3,266,205,000 cu. ft. of gas was required to produce 780,247 bbl. of crude, an average of 4,185 cu. ft. per barrel, against 3,030 cu. ft. in April 1940. Chairman R. E. Allen of the Conservation Board, states: "The present methods of producing the oil demanded for war purposes are resulting in a dangerous diminution in the ability to meet that demand by reason of the incommensurate draft upon the remaining reservoir energy of the field. The evidence available to date indicates that gas may be the only source or energy for the production of crude oil in Turner Valley. Pound for pound, gas is worth more in the reservoir than is crude oil, because, without the gas, crude oil could neither be brought into the well nor lifted to the surface economically. Both retention and restoration of gas will be necessary to maintain the ability of the Turner Valley field to meet the continuous demand upon it for the duration of the war."

Turner Valley Lime Tests

NORTH TURNER VALLEY: Miracle Royalties 1, LSD 3, 4-21-3w5, Madison limestone 7,524 ft., preparing to resume after cementing casing.

Major Oil Investments 1, LSD 5, 34-20-3w5, T.D. 7,593 ft., P.B. to 6,665 ft., 475 bbl. after partial acidization, testing for government allowable after further treatment.

Home Oil 7, LSD 14, 33-20-3w5, below 8,195 ft., top lime 8,088 ft.

Royalite Oil 47, LSD 15, 15-20-3w5, Madison 8,365 ft., and deepening after cementing casing.

NORTH CENTRAL SECTION: Harris Royalties 3, LSD 16, 3-20-3w5, T.D. 8,927 ft., 235 ft. in the Madison, testing more than 100 ft. of porosity in the upper zone, did not reach lower zone.

WEST CENTRAL SECTION: Regal Royalties 1, LSD 14, 24-19-3w5, T.D. 8,270 ft., allowable 165 bbl.

British American-Brown 2, LSD 2, Madison 7,936 ft., deepening below 8,176 ft.

Atlas Royalties 1, LSD 1, T.D. 8,070 ft., 600 bbl. after partial acidizing, is continuing tests.

Okalta Oil 10, LSD 12, 18-19-2w5, T.D. 7,970 ft., allowable 156 bbl.

Twin Valley Syndicate 2, LSD 10, 13-19-3w5, T.D. 8,470 ft., acidizing and testing.

Sunray Petroleum Corp. 1, LSD 8, T.D. 8,267 ft., acidizing and testing.

Southwest Petroleums 5, LSD 2, 8-19-2w5, T.D. 6,955 ft., temporary allotment 185 bbl.

Anglo-Canadian 9, LSD 14, 7-19-2w5, finishing below 7,535 ft., top lime 7,130 ft.

Royalite 55, LSD 7, T.D. 7,643 ft., acidizing and testing.

Royalite 54, LSD 1, T.D. 7,367 ft., allowable 205 bbl.

SOUTHWEST SECTION: Northwest-Hudson's Bay 5, LSD 10, 8-18-2w5, T.D. 8,487 ft., temporary allowable 470 bbl.

New Tests Starting

NORTH TURNER VALLEY: Major Oil Investments 4, LSD 8, 8-21-3w5, spudded and below 100 ft.

Major 5, LSD 14, 35-21-4w5, most northerly test in field, is rigging.

Outside Tests

BLOOD INDIAN RESERVE: Northwest-Treaty 1, LSD 4, 17-8-23w4, below 1,680 ft.

LETHBRIDGE: Lethbridge Petroleum 1, LSD 12, 11-8-22w4, below 3,890 ft., Sunburst 3,870 ft., Madison expected within 240 ft.

KEHO DOME: Keho Dome Oils 1, LSD 3, 18-11-2w4, cellar dug, moving timbers and equipment, cable tools will be used, with Keho Drilling & Petroleums, Ltd., handling the contract.

CLEARWATER: Clear Oils 1, LSD 8, 2-35-10w5, in Devonian lime below 2,680 ft., some gas shows.

KINSELLA: Northwestern Utilities, below 615 ft. in first of a series of five new tests of the gas sand around 2,150 ft., to be completed by August.

STEVEVILLE: Standard of British Columbia 4 Princess, LSD 13, 12-20-12w4, T.D. 3,300 ft., perf. in dry Sunburst sand, may be completed as dry-gas well.

Standard 1 Rainy Hills, LSD 1, 23-18-11w4, spudding.

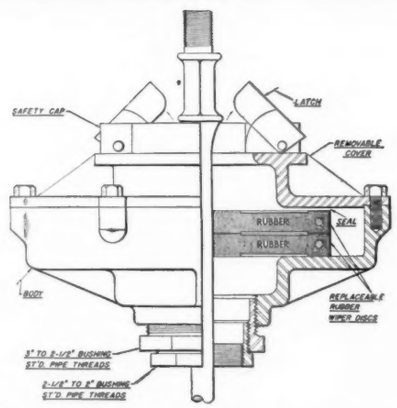
Standard 3 Princess, LSD 5, 13-20-12w4, T.D. 3,260 ft., perforating and testing the Sunburst sand.

Standard 2 Princess, LSD 3, 13-20-12w4, standing cemented, awaiting test.

Ontario Drilling

KINCARDINE TOWNSHIP. Kiser Brothers of Chatham have started test for interests associated with Union Gas Co. on the Semple Brothers farm near Lake Huron, about 7 miles north of Kincardine. Production is looked for in limestone at shallow depth.

MARIPOSA TOWNSHIP. Burton Syndicate has started tests for oil and gas on 4,500 acres northeast of Whitby and west of Uxbridge. Drilling follows preliminary surveys which indicated possible shallow production.



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RENEW YOUR SUBSCRIPTION

Sharkey County Wildcat Makes Oil and Water

By GEORGE WEBER

JACKSON, Miss., June 16.—Prospects for new oil production in Sharkey County were still strong at the close of the past week. The British American Oil Producing Co.'s test in NW NW SW 23-11-7w, the 1-A Jouston, continued to swab an ungaged amount of oil and salt water. It is bottomed at a plugged-back depth of 3,285 ft. from 3,303 ft. The 7⅝-in. casing is cemented at 3,278 ft. with best oil shows reported from 3,279-81½ ft. It has been treated with 1,000 gal. of acid. The best unofficial gage for the well gives it 80 bbl. of net oil and 240 bbl. of water, swabbing, in 24 hours.

The Tinsley field of Yazoo County reported a total of eight new locations the past week with eight completions. Of the latter number only five were producers and the other three were failures. There are now a total of nine standing locations in the field, and 11 wells in the processes of drilling or completion.

SUMMARY OF COMPLETIONS

	No.	Bbl.	Footage
Oil wells: Tinsley	5	4,300	24,667
Dry holes: Tinsley	3	.....	10,514
Wildcats	2	.....	3,479
Total	10	.....	38,660

A Yazoo County wildcat which has been closely watched for several weeks has been bottomed at a total depth of 7,074 ft. and is preparing to quit. It is Sinclair-Wyoming 1 Swayze, W½ E½ W½ 23-12n-1e. It reported the top of the Tallahatta at 1,248 ft., the Wilcox at 1,580 ft., Midway at 3,659 ft., Selma 4,445 ft., Eutaw 5,385 ft., Wilburn 5,452 ft., and the Tuscaloosa at 6,045 ft.

The same firm's 1 Pearl River, NW SW NW 28-9n-6e, in Leake County, is nearing a crucial depth in drilling at 6,526 ft.

MISSISSIPPI COMPLETIONS

Wildcats

Copiah County: Sun Oil 1 Funchess, 25-10n-6e, core hole, dry at 1,885 ft.

Lamar County: Freeport Sulfur Co. 1 Tatum, 14-2n-16w, core hole, dry at 1,394 ft.

Field

Tinsley field, Yazoo County: J. P. Evans 5 Jonnson, 31-10n-2w, flowed 41 bbl. per hr., ¾-in. choke, T.P. 40 lb., 2½-in. tubing at 4,987 ft., Woodruff 4,985-5,023 ft., T.P. 5,025 ft.

C. B. & J. D. Gholson 1 Stutts, 31-10n-2w, flowed 42 bbl. per hr., ½-in. choke, 2½-in. tubing at 5,017 ft., T.P. 100 lb., perf. casing 4,948-88 ft., Woodruff 4,951-5,025 ft.

S. D. Hunter 1 Logan, 1-9n-3w, dry at 300 ft.

L. Johnson 1 Stutts, 31-10n-2w, flowed 917 bbl. daily, ¾-in. choke, 2½-in. tubing at 4,944 ft., Woodruff 4,943-5,022 ft., perf. casing 4,942-80 ft. and 4,985-5,022 ft.

C. H. Lyons 2 Cummings, 31-10n-2w, flowed 28 bbl. per hr., 28/64-in. choke, 2½-in. tubing 4,932 ft., T.P. 86 lb., Woodruff 4,930-5,004 ft., perf. casing 4,930-64 ft. and 4,970-92 ft.

Plains Production Co. 3 Milner, 7-10n-3w, Woodruff 4,879-4,950 ft., D.S. test 5,340-69 ft., recovered 60 ft. mud and salt water, T.D. 5,395 ft., dry.

Slick-Urschel Oil 18 Slich, 2-10n-3w, Woodruff 4,788-4,818 ft., perf. casing 4,778-5,818 ft. and treated 1,800 gal. acid, no results, dry at 4,819 ft.

Union Producing Co. 3 Berry, 25-10n-3w, flowed 130 bbl. in 4 hr., 2½-in. tubing at 4,561 ft., Woodruff 4,571-98 ft., perf. casing 4,570-98 ft.

MISSISSIPPI WILDCATS

Chickasaw County: Century 1-A Flaherty, S½ SW SW 8-13s-3e, T.D. 2,340 ft., fishing junk 2,000 ft.

Grenada County: H. T. Salter et al 1 Carpenter, NE SE 6-21n-7e, derrick.

Grenada 1 Connecticut General, NW SE 28-23-5, drilling 3,716 ft.

Leake County: Sinclair-Wyoming 1 Pearl River, NW SE NW 28-9n-6e, drilling 6,526 ft.

Marshall County: Hilton Phillips est. 1 Withers, SW SW 17-3s-4w, location.

Montgomery County: Henderson 1 School Land, SE NW NW 16-19n-6e, top Selma 1,825 ft., top Eutaw 2,580 ft., Tuscaloosa 2,884 ft., drilling 3,375 ft.

Sharkey County: British American 1-A Houston, NW NW SW 23-11-7w, T.D. 3,303 ft., P.B. 3,285 ft., 7⅝-in. 3,278 ft., show oil 3,279-81½ ft., treated 1,000 gal., swabbed 80 bbl. oil and 240 bbl. water in 36 hr., still swabbing oil and water ungaged.

Stone County: Danciger Oil & Ref. 1 Stone County Sch. Lds., C SE SW 16-2s-11w, drilling 130 ft.

Yazoo County: Sinclair-Wyoming 1 Swayze, W½ E½ W½ 23-12n-1e, top Tallahatta 1,248 ft., Wilcox 1,580 ft., Midway 3,659 ft., Selma 4,445 ft., Eutaw 5,385 ft., Wilburn 5,452 ft., Tuscaloosa 6,045 ft., S.D. 7,074 ft., preparing to abandon.

ALABAMA WILDCAT REPORT

Clarke County: Union 1 M. M. Waite, C NW 27-8n-1w, 16-in. 344 ft., drilling 1,749 ft.

Franklin County: E. O. Heath 1 Hester, 4-6s-1w, 10-in. 645 ft., drilling 795 ft.

Limestone County: Shaw 1 E. E. Carter, SE SW 35-2s-5w, T.D. at last report 600 ft.

Madison County: W. W. Newman 3 B. Nichols, SE NW NE 2-6s-2e, T.D. at last report 100 ft.

Wilcox County: Reid Clark 1 McWilliams, 9-11n-10e, derrick.

Panhandle Locations Increase

AMARILLO, Tex., June 16.—New locations in the Texas Panhandle district's fields the past week showed the greatest number since 1927. There were a total of 43 new locations reported.

Gray County: Shell Oil 4 Gething A, 224 bbl., 250-qt. shot, 2,682-2,789 ft.

Hutchinson County: Phillips 67 Cockrell, 295 bbl., 400-qt. shot, 2,895-2,995 ft.

Phillips 70 Cockrell, 57 bbl., 420-qt. shot, 2,990-3,090 ft.

Phillips 5 Kay, 110 bbl., 160-qt. shot, 3,145-93 ft.

Cy Rieger 3 Herring, 147 bbl. oil and 7 bbl. water, 390-qt. shot, 3,104-3,205 ft.

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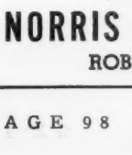

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NORTH LOUISIANA, ARKANSAS

Eastern Outpost to Schuler Completed in Morgan Sand

By GEORGE WEBER

SHREVEPORT, La., June 16.—Crescent Drilling Co. 1 W. A. Burns, wildcat in 13-18-17, the latest field discovery in South Arkansas, has been finaled for a gage of 145 bbl. of oil daily. Gage was through 15/64-in. choke and the oil was 43.1 gravity. Pressures registered 1,700 lb. on the tubing and 1,750 lb. on the casing, with no water showing. Production is from perforation at 5,542-46 ft. in the Travis Peak section. It had been plugged back from a total depth of 7,606 ft. in the Smackover lime. The well is making about 5,000,000 cu. ft. of gas daily with the oil. Considerable interest has been created by the discovery which is east of the Schuler field and it is expected that additional drilling will be started in the area at once.

Dorcheat Outpost Completion Still Delayed by Fishing Job

Either an extension or a new discovery 4 miles east of the Dorcheat field in Columbia County was still delayed by stuck drill pipe at 2,900 ft. It is McAlester Fuel Oil 1 Franks, 16-18-21. As previously reported, the well failed to open Smackover lime production when a decided thickening of section was found below the top of the Cotton Valley formation. The well is bottomed at 8,872 ft. and upon freeing the drill pipe it will attempt completion from shows in the lower Marine at 6,910-20 ft.

New Wildcat Staked In Arkansas County

C. W. Robinson of Shreveport made location for a wildcat test in Arkansas County about a year ago and has recently turned the deal to Blackwell Oil & Gas Co. to drill the 4,500-ft. hole. The location will be in the C SE 23-5n-3w. Contract has been let and materials are to be moved in for immediate drilling. It is being supported by several companies.

ARKANSAS WILDCAT COMPLETIONS

Dallas County: H. H. McBride 1 So. Kraft Corp., 16-9s-16w, dry at 1,463 ft.
Faulkner County: Cato Oil 1 Harrell, 35-5n-2w, dry at 3,626 ft.
Sabine County: Tedford & Miller 2 Williams, 31-3s-15w, dry at 6,801 ft.
Union County: Crescent Drlg. 1 Burns, 13-18-17, discovery well, flowed 5½ bbl. hourly, 16/64-in. choke, T.P. 1,700 lb. and C.P. 1,700 lb., gas-oil ratio 15,000 to 1, gravity 46.6, T.D. 7,702 ft., P.B. to 5,580 ft. *Discovery East Schuler field.*
Hassie Hunt 1 Union Saw Mill, 34-17-13, dry at 3,705 ft.

FIELD COMPLETIONS

El Dorado, Union County: Bradham & Brooks 1 Mary Finley, 12-17s-15w, dry at 3,278 ft.
Smackover, Union County: Bob Milem 1 Holloway, 6-16s-16w, 50 bbl. daily, 85 per cent salt water, T.D. 2,890 ft.
Urbana, Union County: Marine Oil 3-E Thompson, 158 bbl. daily, 11/16-in. choke, T.P. 235 lb., C.P. 850 lb., 10-18-13.
Troy, Nevada County: Berry Asphalt Co. 3 Meadows, 4-14s-20w, pumping, 25 bbl. daily, T.D. 1,183 ft.

ARKANSAS WILDCAT REPORT

Clark County: Coker, Christmas & Grieves 1 Williams, NE NE NE 7-11-20, T.D. 1,689 ft., fishing pipe at total depth.
Columbia County: McAlester Fuel Co. 1 Franks, SE SE 16-18-21, T.D. 8,781 ft., drill stem stuck, cemented 500 ft. of drill pipe in hole, W.O.C.
Howard County: Miller & Fletcher 1 Dierks Lumber Co., SW SW 7-8s-28w, S.D. 500 ft.
Jefferson County: Patterson & Stratton 1 F. and D. Stratton, SE NW NE 35-6s-9w, S.D. 1,687 ft.
Lafayette County: Tide Water and Seaboard 1 Moore, SW SE 29-17s-2w, location.
Lonoke County: A. V. Riley 1 J. T. Gunter, SE SE SE 17-5n-10w, T.D. 3,045 ft., S.D.
Ouachita County: Arkansas Fuel Oil Co. 1 McGaughey, NW NW 6-15s-18w, top Nacatoch 1,412 ft., upper Stevens 2,055 ft., lower Stevens 2,095 ft., Tokio 2,300 ft., lower Cretaceous 2,340 ft., Jones 2,435 ft., S.D.W.O. 3,320 ft.
Prairie County: Alvin E. Stark 1 Fidelity Mutual, NE NE SW 16-2n-6w, 5½-in., 1,230 ft., T.D.
Union County: Anthony & Co. (formerly Sam Sebersky) 1 Union Sawmill Co., SE NE NE 15-18s-14w, set casing 2,250 ft., waiting on cement, cored 2,240-50 ft., sandy shale and marl, oil saturation in sand, drlg. plug at 2,236 ft.

New Wilcox Field Brought in Between Nebo and Jena

H. L. Hunt, discoverer of the Olla, Nebo, South Olla and Little Creek fields in La Salle Parish, has brought in a new field between the Nebo and the Jena areas. The well is 1-C Goodpine, SW NW 33-8-3, about 3 miles north of production at Nebo. Production is from the Wilcox formation; however, no final gage has yet been reported on the strike. It is being tested on gas-lift and promises to be a sizable well. The operator has already staked his No. 2-C Goodpine, NW NW 33-8-3.

Ajax Extension Discovery Awaits Gage

The extension to the Ajax field, which extends the area across the line and into De Soto Parish, is scheduled for official gage this week end. It is Edman Petroleum 1 Tanner, C SE SE 13-10-11, about ½ mile west of the lone producer of the Ajax field which is located in extreme northwestern Natchitoches Parish. The discovery well was completed for 35 bbl. daily from perforation at 3,208-13 ft. The new well is expected to be perforated in this zone for completon during the coming few days. Considerable gas volume has been found and it is believed that if the well does not make a dry gas producer it will be a high-ratio oil well.

Smackover Lime Test Staked in Carroll Parish

Since the first days of Smackover lime production in Arkansas operators have been looking for production at this level in North Louisiana. Recently the United Gas Co., together with Dr. A. F. Crider, geologist of Shreveport, La., brought in a 700-bbl. distillate well north of Lisbon in 1-A Meadows, located in 18-21-4. The past week Crow Drilling Co., Shreveport, and others staked a location for a 7,000-ft. wildcat as 1 E. L. Cruce Lumber Co., C SE 16-21-6, in the western part of Carroll Parish, on the eastern flank of the Monroe uplift. The test is on a 5,000-acre block acquired from R. T. Thornton, Fort Worth, Tex., being a portion of a 37,500-acre block. The following companies are supporting the test: Union Producing Co., Arkansas Fuel Oil Co., Wheelock & Collins, Nemours Corp. of Wilmington, Del., John G. Mayo, Houston, and others. Much interest has been aroused over possible Smackover lime production in the area since British American 1-A Houston, wildcat in Sharkey County, Mississippi, some 25 miles to the east, has verified the fact that the embayment area from Mississippi to Monroe is worthy of some attention.

NORTH LOUISIANA COMPLETIONS

Wildcats

Grant Parish: R. C. Bowers 1 Matheson, 15-9n-1e, dry at 1,602 ft.
Bert Fields 1 McManus, 8-8n-4w, dry at 3,560 ft.
Sabine Parish: K. E. Merren 1 Nona Mills, 28-3n-12w, dry at 4,040 ft.

Fields

Caddo, Caddo Parish: C. M. Bagley 1 Stiles, 32-21n-16w, pumped 15 bbl., T.D. 1,868 ft.
Davis & Hart 7-B Muslow, 32-21n-15w, pumped 28 bbl., T.D. 1,526 ft.
L. L. Lanier 3 Spell, 12-20n-16w, pumped 18 bbl., 4,000 gal. acid, T.D. 1,560 ft.
McDonald & Campbell 18 Youree, 13-20n-15w, pumped 60 bbl., T.D. 2,274 ft.
Weaver-Perry Oil 9 Pardue, 33-21n-15w, pumped 35 bbl., T.D. 1,558 ft.
Little Creek, La Salle Parish: Placid Oil 3 Doughty, 32-9n-2e, flowed 285 bbl. daily, 14/64-in. choke, 68 per cent salt water, T.P. 90 lb., C.P. 420 lb., perf. 2,418-23 ft., T.D. 3,048 ft.
Monroe, Union Parish: Interstate Nat. Gas 107 fee, 4-19n-3e, flowed 1,654,000 cu. ft. gas, T.D. 2,184 ft.
Nebo, La Salle Parish: H. L. Hunt 25-A Goodpine, 16-7n-3e, flowed 15 bbl. per hr., 4 per cent salt water, 12/64-in. choke, T.P. 450 lb., C.P. 750 lb., perf. 3,504-10 ft., T.D. 3,760 ft.
Olla, La Salle Parish: Arkansas Fuel Oil 1-C Nugent, 25-10n-2e, flowed 5 bbl. per hr., 3 per cent salt water, 12/64-in. choke, T.P. 50 lb., C.P. 425 lb., perf. casing 2,192-97 ft., T.D. 2,805 ft.
Arkansas Fuel Oil 1 Tremont Lbr. Co., 10-9n-2e, flowed 4 bbl. per hr., 1 per cent salt water, T.P. 320 lb., C.P. 650 lb., perf. 2,773-76 ft., T.D. 3,900 ft.
Placid Oil 92 L. Cent. Lbr. Co., 36-10n-2e, flowed 93 bbl., gas lift, 14/64-in. choke, 50 per cent salt water, T.P. 320 lb., C.P. 800 lb., perf. casing 2,253-58 ft., T.D. 2,401 ft.
Placid Oil 95 La. Cent. Lbr. Co., 36-10n-2e, flowed 94 bbl., gas lift, 22/64-in. choke, 2 per cent salt water, T.P. 80 lb., C.P. 350 lb., T.D. 2,464 ft.
Placid Oil 90 La. Cent. Lbr. Co., 26-10n-2e, flowed 136 bbl., gas lift, 20 per cent salt water, T.P. 90 lb., C.P. 325 lb., perf. casing 2,213-20 ft., T.D. 2,430 ft.
Placid Oil La. Cent. Lbr. Co., 35-10n-2e, flowed 125 bbl., 14/64-in. choke, 6 per cent salt water, T.P. 80 lb., C.P. 800 lb., perf. casing 2,106-13 ft., T.D. 2,422 ft.

NORTH LOUISIANA WILDCAT REPORT

La Salle Parish: Arkansas Fuel Oil 13-A Tremont, W½ NW 29-10-2, location.
Delta Drlg. Co. 1 Hughes, NE NE SW 22-8-1e, set 5½-in. casing 1,509 ft., old T.D. 4,092 ft., S.D.
Milton J. Houston et al 1 Gross, NE NE 19-8n-3e, S.D. 1,637 ft., last report.
M. L. Meredith 1 Grey, NE NE 36-8-2e, S.D. 50 ft.
H. R. Scivally, Tr. 1 Tensas Delta, SW NE 12-6n-4e, 10¾-in. casing 571 ft., S.D., salt water, T.D. 5,015 ft., top Cockfield 1,540 ft., Cook Mountain 2,115 ft., Sparta 2,260 ft., Cane River 2,990 ft., perf. casing 4,757-62 ft., treated with acid, recovered show oil and sulfur water, squeezed off and reperf. 4,755-60 ft., flowed 15 bbl. fluid per hr., 15 per cent wash water and mud, still testing.
Sabine Parish: Edmonds Pet. 1 Tanner, 13-10n-11w, T.D. 3,255 ft., preparing set casing to test shows.
Pace Pet. 2-B Logan, 21-10-10, drilling 2,703 ft.

EAST TEXAS BORDER WILDCAT REPORT

Cass County: British American Oil Prod. Co. 1 East Texas Iron Association, L. Moren Sur., T.D. 4,314 ft., S.D., awaiting orders.
Sabine County: Sturm & Womack 1-A Keith, L. Grace Sur., drilling deeper below 6,500-ft. contract depth, 5-in. 6,727 ft., T.D. 6,928 ft., S.D. to clear titles.
Paul Pewitt 1 Mrs. H. E. Barton, John S. Lacy Sur., 13-in. casing 100 ft., drilling 3,000 ft.
San Augustine County: Roper & Todd 1 Long Bell Lumber Co., H. Hyden Sur., T.D. 3,633 ft., recovered drill pipe, prep. drill deeper.

Texas Gulf Coast

(Continued from Page 89)

Orange County: Jack Frazier 1 C. L. Brown, dry, T.D. 8,510 ft.

FIELDS

Anahuac, Chambers County: Humble 36 Johnson, 579 bbl., ¼-in. choke, perf. casing 7,016-26 ft., T.D. 7,200 ft.
Blessing, Matagorda County: Texas 1-A Pierce, 148 bbl., ¼-in. choke, perf. casing 8,306-14 ft., T.D. 8,317 ft.
Chenango, Brazoria County: Stanolind 1 A. Smith, 150 bbl., ⅛-in. choke, perf. casing 8,561-68 ft., T.D. 8,600 ft.
Dyersdale, Harris County: Jack Frazier 3 Griffith, 396 bbl., ¼-in. choke, sand 3,468-97 ft., T.D. 3,504 ft.
Jack Frazier 6 Griffith, dry, T.D. 4,142 ft.
Esperson, Liberty County: General Crude 25 Davis, 721 bbl., ¾-in. choke, perf. casing 6,175-95 ft., T.D. 6,240 ft.
Fannett, Jefferson County: Gulf 10 Bordages, 687 bbl. ¼-in. choke, T.D. 8,337 ft.
Fig Ridge, Chambers County: Sun 1 Mackelburg, 70 bbl., 9/32-in. choke, T.D. 9,785 ft., P.B. 8,835 ft.
Fishers Reef, Chambers County: Humble 10-C State, 168 bbl., ⅛-in. choke, perf. casing 8,753-55 ft., T.D. 8,964 ft.
Lakeview, Wharton County: W. R. Davis 1 Hartman, 175,000 cu. ft. gas and 6 bbl. fluid, 35 per cent 24-gravity oil, perf. casing 3,400-20 ft., T.D. 6,752 ft.
Lolita, Jackson County: Cox & Hamon 1 McCall, 265 bbl., ⅛-in. choke, perf. casing 5,952-56 ft., T.D. 6,424 ft.
Humble 16-A L. Ranch, 312 bbl., ¼-in. choke, sand 5,935-38 ft.
Shell 3 Willoughby, 172 bbl., ⅛-in. choke, perf. casing 6,390-96 ft., T.D. 6,410 ft.
North Markham, Matagorda County: Sun 2 Braman, 156 bbl., ⅛-in. choke, perf. casing 6,967-70 ft., T.D. 8,107 ft.
Thompson, Fort Bend County: Loffland Brothers 4 State, 166 bbl., ⅛-in. choke, perf. casing 7,925-30 ft., T.D. 7,935 ft.
Tomball, Harris County: Humble 9-A Kobs, 312 bbl., ¼-in. choke, perf. casing 5,547-51 ft., T.D. 5,556 ft.
Turtle Bay, Chambers County: Stanolind 2 White, 157 bbl., ⅛-in. choke, T.D. 6,640 ft.
Van Vleck, Matagorda County: Skelly 22-C Cobb, 121 bbl., 7/64-in. choke, perf. casing 7,488-92 ft., T.D. 8,640 ft.
West Columbia, Brazoria County: Texas 23 Phillips, 407 bbl., ¾-in. choke, perf. casing 5,726-36 ft., T.D. 5,840 ft.
West Ranch, Jackson County: Humble 8 Vanderbilt State, 456 bbl., ¼-in. choke, sand 5,569-84 ft.
Magnolia 157-A West Ranch, 170 bbl., ¼-in. choke, perf. casing 5,570-78 ft., T.D. 5,591 ft.
Magnolia 160-A West Ranch, 52 bbl., 4 hr., ⅛-in. choke, perf. casing 5,743-49 ft., T.D. 5,750 ft.
Magnolia 149-A West Ranch, T.D. 5,753 ft., blew out, plugged.

TEXAS GULF COAST DRILLING REPORT

Brazoria County: Glenn McCarthy 1 Marmion, Baileys Prairie area, drilling shale 10,432 ft.
Jackson County: Erwin & Johnson 1 Vesely, J. Davis Sur., Mauritz area, drilling sand and shale 1,000 ft.
Jefferson County: Humble 2 Baird, Sabine Pass area, B. F. Howard Sur., drilling shale 4,159 ft.
Lavaca County: Herton 1 Hohmann, Wm. Taylor Sur., drilling shale 3,000 ft.
Matagorda County: Magnolia 1 Northern Ranch, Wm. Hurd Sur., drilling shale 7,445 ft.
Stanolind 1 Doman, H. Harrison Sur., S.D. 6,555 ft., high water.
Wharton County: Sinclair Prairie 1 Carlson, E.T.R.R. Sur., Sec. 54, rigging up.

Ravenswood Well Showing Oil Converted Into Gas Producer

By STAFF CORRESPONDENT

PITTSBURGH, Pa., June 16.—In Ravenswood district, Jackson County, the wildcat of Joe Rubin et al on the H. O. Maddox farm which was reported having a show of oil in the Oriskany sand, topped at 4,995 ft., and drilled to 5,001 ft., was shot and is a gas well gaging 400,000 cu. ft. a day with some oil, possibly 5 bbl. a day, still showing. It will be shut in and tested as a gas well as the oil can be taken care of through a drip.

In Monongalia County the test of the Hope Natural Gas Co., on the H. C. Greer et al lease in Morgan district is drilling at 4,751 ft. In Freemans Creek district, Lewis County, the rotary test on the Albert Woofter farm is rigging up.

WEST VIRGINIA COMPLETIONS

Boone County, Sherman district: Owens, Libby-Owens 35 Peytona Coal Land Co., 39,000 cu. ft. gas after shot, Big lime 1,739-1,955 ft., Injun 1,955-75 ft., Berea 2,417-45 ft., brown shale 3,954-4,095 ft., brown shale 4,628-4,948 ft., Corniferous lime 4,953 ft., T.D. 5,086 ft., will plug and abandon.

Braxton County, Birch district: Pittsburgh & West Virginia 7792 Bessie Mollohan, dry, through Injun sand, T.D. 2,117 ft.

Pittsburgh & West Virginia 7835 Genevieve Parr, dry, through Injun sand, T.D. 1,869 ft.

Cabell County, Grant district: Earl Hanley 1 fee, 60,000 cu. ft. gas after shot, Salt sand 1,045-1,355 ft., Big lime 1,490-1,655 ft., Big Injun 1,705-1,800 ft., Berea 2,210-34 ft., R.P. 320 lb.

Calhoun County, Sherman district: Bowser Oil & Gas Co. 1 McClellen Haught, 10 bbl., Injun sand 2,100 ft.

Clay County, Buffalo district: Pittsburgh & West Virginia 7812 Elk River Coal & Land Co., 63,400 cu. ft. gas, Injun sand, T.D. 2,263 ft.

Pittsburgh & West Virginia 7813 Elk River C. & L. Co., 3,130,000 cu. ft. gas, Blue Monday sand, T.D. 1,815 ft.

Union district: Reed-Wheeler-Young 23 Goshorn heirs, dry, Salt sand, T.D. 1,310 ft.

Gilmer County, Glenville district: Pittsburgh & West Virginia 7804 S. A. Hays, 46,000 cu. ft. gas, Big Injun sand 1,599-1,682 ft., gas 1,640-56 ft., T.D. 1,689 ft.

Lincoln County, Jefferson district: Left Fork Oil & Gas Co. 1 Lucinda Lovejoy, former gas well now making 70,000 cu. ft. gas, has started producing 2 bbl. oil a day. Was completed in brown shale over a year ago, T.D. 2,600 ft.

Union district: Stowers Gas Co. 1 John and Jessie Stowers, 103,000 cu. ft. gas, Big lime 1,376-1,575 ft., Big Injun 1,575-1,610 ft., Berea 2,073-91 ft., brown shale 3,100-3,431 ft., T.D. 3,448 ft., shot 3,088-3,448 ft., R.P. 380 lb.

Mingo County, Warfield district: Virginian Gasoline & Oil Co. V1-289 Henry Closterman, 4 bbl., Maxton sand, T.D. 1,456 ft.

Pleasants County, Lafayette district: Gold Oil & Gas Co. 2 E. C. and Cora Owens, 75,000 cu. ft. gas and 4 bbl., Big Injun sand T.D. 1,951 ft.

Putnam County, Curry district: United Fuel Gas Co. 5003 N. L. Oxley, 103,000 cu. ft. gas, Big lime 1,432-1,602 ft., Injun 1,627-79 ft., Berea 2,114-40 ft., brown shale 3,275-3,362 ft., brown shale 3,440-3,645 ft., shot 3,274-3,645 ft., T.D. 3,646 ft.

Wood Gas Co. 2 Samuel Wood, 4,503,000 cu. ft. gas, Salt sand 1,215-1,550 ft., Big lime 1,725-1,830 ft., gas 1,815-25 ft., T.D. 1,830 ft., R.P. 602 lb.

Wayne County, Union district: Owens, Libby-Owens 2 J. D. Baker, 94,000 cu. ft. gas, Big lime 1,360-1,570 ft., Big Injun 1,570-1,620 ft., Berea 2,186-2,217 ft., brown shale 2,596-3,085 ft., brown shale 3,290-3,347 ft., T.D. 3,347 ft., shot 2,560-3,085 ft., R.P. 290 lb.

Wirt County, Clay district: Shimer & Leman 1 O. C. Beckner, dry, Big Injun, T.D. 450 ft.

SUMMARY OF COMPLETIONS

Southwest Pennsylvania

	No.	Bbl.	Footage
Oil wells	1	10	3,050
Gas wells	3	*0.7	6,083
Total	4		9,133

West Virginia

	No.	Bbl.	Footage
Gas wells: Oriskany field	3	*14.0	15,050
Other fields	9	*8.2	22,223
Oil wells	2	14	3,556
Dry holes	6		10,832
Total	20		51,661

*Million cu. ft.

ORISKANY GAS FIELDS

Kanawha County, Poca district: Columbian Carbon Co. 1 J. F. Burdette, 1,220,000 cu. ft. gas after shot, Corniferous lime 4,721 ft., Oriskany 4,830 ft., T.D. 4,902 ft.

Jackson County, Ripley district: Spartan Gas Co. 3 S. L. Clendenin, 11,327,000 cu. ft. gas, Berea 2,306-12 ft., Corniferous lime 4,827-4,930 ft., Oriskany 4,930-48 ft., gas 4,933-38 ft., T.D. 4,948 ft.

Everett Starcher 1 William H. Archer, 1,427,000 cu. ft. gas, Berea 2,519-30 ft., Corniferous lime 5,007-5,124 ft., Oriskany 5,124-84 ft., gas 5,124-30 ft., T.D. 5,200 ft., R.P. 1,449 lb.

Laurel Ridge Test Nears Possible Pay Horizon

On Laurel Ridge in Stewart Township, Fayette County, New Penn Development Co. et al have apparently topped the Oriskany sand in the wildcat on the Gregg L. Neel farm at 8,188 ft. as the sample of the last run showed both chert and sand. As the top of the Onondaga chert was placed at 8,050 ft., this gives a thickness to that member of 138 ft. which is normal when correlated with the test to the north on the Indiana Savings & Trust Co. along the Menocher Highway. In Maryland these operators reached 5,323 ft. in the test on the Humberson farm on the Accident dome in Garret County and are now cementing.

On Chestnut Ridge in Fayette County, Peoples Natural Gas Co. is drilling 4 Piedmont Coal Co. at 5,092 ft., and No. 5 at 2,140 ft. New Penn Development Co., William Snee et al are drilling 1 Carothers at 375 ft. and waiting on band wheel to start 1 Kirby. Greensboro Gas Co. is building rig for 1 Baryon.

In North Union Township, Fayette County, Wasson & Co. et al shut down at 7,359 ft. in 2 J. H. Sorg with over 1,000,000 cu. ft. gas turned in the line. Most of this gas is from the Oriskany sand, which has been drilled 76 ft.

In Center Township, Beaver County, St. Joseph Land Co. is drilling at 4,000 ft. in the wildcat on the J. P. Koehler farm. On Big Knob in New Sewickley Township, L. D. McMichaels et al are still shut down at 5,434 ft. or in the Oriskany cap rock in the test on the Elmer Pflug farm.

SOUTHWEST PENNSYLVANIA COMPLETIONS

Armstrong County, Plum Creek Township: T. W. Phillips 2 J. P. Dunmire, 313,000 cu. ft. gas, Thirty-foot sand, T.D. 1,842 ft.

Greene County, Cumberland Township: Equitable 1 C. Y. Hathaway, 342,000 cu. ft. gas, Big Injun sand 1,746 ft., gas 1,765 ft., T.D. 1,765 ft.

Jefferson County, Beaver Township: T. W. Phillips 1 Alvin Smith, 78,000 cu. ft. gas, Bradford sand, T.D. 3,196 ft.

Washington County, Morris Township: Union Gasoline & Oil Corp. 5 W. E. Craft, 10 bbl., Fifth sand 3,017-50 ft., oil 3,033-40 ft., T.D. 3,050 ft., will shoot.

North Central Texas Fields

(Continued from Page 70)

NORTH TEXAS ACTIVE WILDCATS

Archer County: W. B. Hamilton 22 Cartwright, 660 ft. from W and S lines, James Webb Sur., Abst. 664, T.D. 5,211 ft., P.B. 5,164 ft., putting on pump.

C. W. Snoddy 1 Carter, SE cor. N 60 acres of W 120 acres of Sec. 38, Clark and Plumb subd., 1,400 ft. test, coring 1,125 ft.

Clay County: Bridwell Oil 1 Myers (old well drilling deeper), Charleton Thompson Sur., Abst. 444, top Mississippian 5,997 ft., old T.D. 6,065 ft., derrick to drill deeper.

Bridwell Oil 2 Myers, 3,350 ft. from W and 2,185 ft. from N lines, Thompson Sur., Abst. 444, 6,000-ft test, T.D. 6,098 ft., prep. test.

Gulf 1 C. W. Scaling, NW NW Sec. 31, T.&N.O. Sur., Abst. 685, 6,000-ft. test, flowed 88 bbl. oil and 16 bbl. water in 8 hr., fishing rods 5,814 ft.

Grayson County: R. W. Talbot 1 Jewell, SW cor. 159-acre tract in William Allen Sur., Abst. 15, 5,000-ft. test, water sand 5,427-34 ft., drilling 5,617 ft.

Jack County: F. Kirk Johnson 1 E. J. Shawver, 660 ft. from S and 530 ft. from E lines of NW SE. J. Turner Sur., Abst. 609, 5,500-ft. test, drilling 1,350 ft.

W. H. Carter 1 L. W. Carney, 2,256 ft. from N and 467 ft. from E lines John D. Rogers Sur., Abst. 501, drilling 1,350 ft.

Alma Oil 1 Maxey, V. W. Maxey Sur., drilling 3,973 ft.

Throckmorton County: Rathke Oil 1 Swagerty, 495 ft. from N and 746 ft. from E lines of SW Sec. 258, B.B.B.&C. Sur., 5,000-ft. cable-tool test, top Marble Falls 4,877 ft., drilling 4,896 ft.

Jimmie Rogers 1 Timmons, NW cor. S½ Sec. 2189, T.E.&L. Sur., 4,200-ft. test, show of gas 670-80 ft., drilling 1,130 ft.

A. L. Wasson 1 Erwin, 4,250 ft. from W and 2,000 ft. from S lines Samuel Holder Sur. A-212, freeing casing 825 ft.

Wichita County: King Oil and Perkins & Cullum 1 Wells, 2,353 ft. from W and 4,230 ft. from N lines, Lot 23, J. A. Ventross Sur., Abst. 103, 5,000-ft. test, drilled saturation in K.M.A. lime, swabbed and cleaning out, est. 5 bbl. per hr. 4,065 ft.

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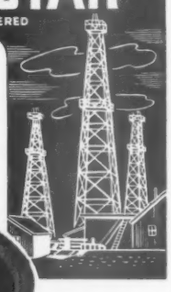

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Young County: F. H. D. Co. and Fliming-Kimbell Corp. 1 Graham, SE cor. Sec. 2912, T.E.&L. Sur., 5,000-ft. test, top Caddo 3,778 ft., drilling 4,012 ft.

L. T. Burns 1 Dashe, SE cor. Sec. 18, I. Holeman Sur., Abst. 160, 5,500-ft. test, top Caddo 4,494 ft., show oil, drilling 3,960 ft.

Consolidated Oil 1 Dunigan, 467 ft. from S and E lines Sec. 163, T.E.&L. Sur., 5,000-ft. test, top Caddo 4,197 ft., show oil 4,200-15 ft. and 4,248-53 ft., drilling 4,580 ft.

Shell 1-A Bloodworth, Sec. 151, T.E.&L. Sur., 6,200-ft. test, top Ellenburger 5,038 ft., show oil, setting casing 5,100 ft., total depth.

T. D. Humphrey 1 Williamson, 1,537 ft. from N and 330 ft. from E lines Sec. 601, T.E.&L. Sur., 3,100-ft. test, drilling 2,800 ft.

R. P. Dorian 1 Daniels, 330 ft. from S and W lines Sec. 421, T.E.&L. Sur., 6,000-ft. test, spudded.

Wrightsman Oil 1 Gilmore, 2,107 ft. from NE and 1,960 ft. from SE Sec. 3, B.B.B.&C. Sur., 2,600-ft rotary test.

Second Pay Found in Wimberly Pool, Jones County

FORT WORTH, Tex., June 16.—An outpost test to the recently discovered Wimberly pool in south Jones County has indicated the opening of a second and slightly shallower pay level for the area. The test is the W. D. Brookover et al 1 W. C. Church, southeast corner of Goodwin subdivision 88, which showed oil and gas through 600 ft. of cavings from the lower Hope sand at 2,325-2,438 ft. Operators had killed the well and were preparing to run pipe at the end of the week.

The discovery well, Harry Hines 1 Wimberly, is producing from lime at 2,530-33 ft., approximately 100 ft. lower than the new west offset. Both wells encountered a fair showing in sand at the 2,200-ft. level.

Three New Wildcats Started; Two Others to Be Deepened

JONES COUNTY.—Three new wildcats have been staked in the district this week. Two of the tests will be in Jones County and the third in Stephens County. In Jones County the M.C.L. Corp. will drill 1 Swanson and Swenson, NW cor. Section 187, B.B.B.&C. Survey, on an 80-acre farmout from Sinclair Prairie. The 3,400-ft. test is located 2½ miles northwest of the Avoca pool and 3 miles north of the Griffin pool. The second wildcat is 1 C. C. Lenderman, SW Section 5, Block 15, T.P. Survey, to be drilled by Butler & Horne and U. L. Miller. It is located between the Lewis-Steffens and Sandy Ridge pools.

STEPHENS COUNTY.—A new Marble Falls lime test will be Frank G. Beaudoin 1 J. A. Tomlinson in Stephens County. The 4,000-ft. test is located in the NE cor. Section 453, S.P. Survey.

RUNNELS COUNTY.—Shut down since late last September, the A. J. Johnson et al 1 Bert Wheeler, Runnels County wildcat, has been rigging up and is scheduled to resume drilling soon. No. 1 Fletcher is 825 ft. north of the west corner of E. C. Good preemption Survey 58½ but in the E. W. Bull Survey 333. It was announced that the scheduled 4,350-ft. test would be carried to contract depth.

CONCHO COUNTY.—A wildcat in southwestern Concho County which last year gave indication of production at 3,829 ft., is being drilled 500 ft. deeper, seeking pay in the Ordovician section. This test is Floyd C. Dodson 1 Robert Wilson, 10 miles southwest of Eden.

SOMERVELL COUNTY.—Plymouth Oil Co.'s 7,000-ft. wildcat, 1 Cousins, Somervell County, was last reported drilling below 2,940 ft. It is located about 2 miles south of the town of Glen Rose and is scheduled to be carried to the Ordovician section.

WEST CENTRAL TEXAS COMPLETIONS

WILDCATS

Coleman County: R. D. Herring 1 Hughes, dry at 610 ft.

Jones County: Merry Brothers & Perini and Butler & Horne 1 Collins, dry at 2,965 ft.

W. W. Fondren 1 Hodges, 36 bbl. oil and 144 bbl. of water in 24 hr., pumping, perf. casing 20 shots 2,943-48 ft., P.B. to 2,960 ft., T.D. 3,070 ft.

Shackelford County: O. C. Olson 1 Swenson, dry at 1,608 ft.

T. F. Morrow 1 Dyer, dry at 1,220 ft.

Stonewall County: Leander Oil 3 Carlisle, dry at 6,576 ft.

FIELDS

Akard, Jones County: Hendrick Oil 2-D Akard, 156 bbl. in 24 hr., ½-in. choke, est. 300 bbl. daily, 2,128-37 ft.

Lewis, Jones County: Roeser & Pendleton 2 Hollis, 54 bbl. in 23 hr., est. 4,500,000 cu. ft. gas squeezed off, 2,016-20 ft., T.D. 2,028 ft.

Novice, Coleman County: R. McKissick 10 Morris, dry at 2,736 ft.

Barney Carter 1 Dunman, dry at 3,695 ft.

Putman, Callahan County: L. H. McCrea 2 Isenhower, dry at 262 ft.

Shackelford County: R. H. Roark 4 Elliott, dry at 851 ft.

WEST CENTRAL TEXAS ACTIVE WILDCATS

Brown County: Guyle Greynolds 1 Crownover, 467 ft. from S and E lines Sec. 26, B.B.B.&C. Sur., 3,000-ft. test, top Caddo 2,465 ft., saturate 2,934 ft., preparing to acidize, T.D. 2,955 ft.

Harry E. Murray 1 Fry, 900 ft. from NE and 900 ft. from NW lines John Williams 33, 1,400-ft. cable-tool test, first report.

Callahan County: C. J. Kleiner 2 Williams, 3,000 ft. from S and 250 ft. from W lines NW cor. Sec. 3, T.&N.O. Sur., Blk. C, 1,200-ft. cable-tool test, drilling 900 ft., first report.

Merry Bros. & Perini 1 Sam DeSpain, 767 ft. from E and 3,100 ft. from S lines Sec. 32, S.P.R.R. Sur., Blk. 8, 3,200-ft. rotary test, first report.

W. D. Austin 1 I. N. Jackson, 150 ft. from N and W lines Sec. 2, C.&M. Sur., 7-in. casing 970 ft., T.D. 982 ft., reaming.

Coleman County: J. O. Hart & Sons 1 Brooks-Peyton, SW Lot 7, Samuel B. Mixon Sur., Abst. 522, 1,350-ft. test, S.D. 1,010 ft.

West Coast Prod. Corp. 1 Morris, SW cor. of NE 160 acres, J. Greenwood Sur. 308, 1,000 gal. acid, 2,594-2,619 ft., pumped 12 bbl. oil in 12 hr., drilling 2,715 ft.

States Oil 1 Sealy & Smith, NE 160 acres of J. Greenwood Sur. 304, rigging up rotary, first report.

McKissick & Robertson 1 Finley, 467 ft. from S and 934 ft. from W of SW cor. Sec. 22 but in Sec. 45, T.&N.O. Sur., Blk. 2, 3,500-ft. rotary test, first report.

Concho County: Nixon & Abernathy 1 Riley, 585 ft. from S and 819 ft. from E Sec. 1705, G. C. F. Blanchard Sur., Abst. 1225, 1,200-ft. cable-tool test, first report.

Floyd C. Dodson 1 Robert Wilson, Thomas Green Sur., 10 mi. SW Eden, show oil 3,792-95 ft., T.D. 3,829 ft., has been shut down for 2 months.

Eastland County: Sabens & West 1 Hall, on section line between Secs. 100 and 93, Blk. 3, H.&T.C. Sur., 3,500-ft. test, drilling 700 ft.

Dobbs Oil 1 Hightower, NE SE Sec. 4, Blk. 3, H.&T.C. Sur., 3,100-ft. test, drilling 1,510 ft.

Fisher County: General Crude Oil 12 Flanigan, center of old Royston field, shot 15 qt. 4,480-94 ft., T.D. 6,746 ft.

P. R. Long 1 Maberry, SE cor. A. A. Soring Sur., 2 mi. SW of McCaully, rigging up spudder 3,279 ft.

Hamilton County: Lone Star Gas Co. 1 Burks, 1,654 ft. from NE and 1,175 ft. from NW lines James Hayes Sur. 16, Pat D-705, 3,000-ft. test, surface casing 158 ft., top Marble Falls 2,565 ft., drilling 2,712 ft.

Hood County: Aztec Oil 1 Gallagher, SW SE Robert Alway Sur., 3,000-ft. test, drilling 2,925 ft.

Jones County: S. B. Roberts 1 Cooper, SE SE SW Sec. 20, Blk. 15, T.&P. Sur., 4,000-ft. test, T.D. 4,919 ft., treated 1,000 gal. acid, made 8 bbl. oil in 24 hr., S.D.

T. J. Coyne 1 L. E. Clyburn, NW cor. tract in Lots 24 and 27, Holt subdivision of Henry Millard Sur. 243, 2,000-ft. test, drilling 815 ft.

W. D. Brookover 1 W. C. Church, SE cor. Lot 88, Godwin subdivision of De Witt C.S.L. Sur., 2,600-ft. test, drilling 1,924 ft.

M. J. Delaney 1 Short, 467 ft. from S and E lines of SW Sec. 191, B.B.B.&C. Sur., 3,300-ft. rotary test, first report.

Falls Ref. Co. 1 Spurrier, 370 ft. from S and 1,620 ft. from W lines of Lot 1, Wm. C. Walker Sur. 6, drilling 1,798 ft.

J. J. McMahon 1 Miller, 400 ft. from S and 330 ft. from E lines Lot 13, Warren subdivision 125, drilling 2,300 ft.

Palo Pinto County: Hickok Prod. and Reynolds 1 Halsell, 467 ft. from S and W lines Sec. 92, B.B.B.&C. Sur., Abst. 105, 5,500-ft. test, P.B. to 4,520 ft., shot 100 qt. 4,570 ft., no results, reshot 120 qt., 4,420-55 ft., cleaning out to test, T.D. 4,630 ft.

W. K. Gordon 1 J. S. Crouch, 3,300 ft. from S and 290 ft. from E lines Sec. 87, Blk. 3, T.&P. Sur., 3,500-ft. test, drilling 1,430 ft.

F. Guyer 1 Dalton, L. B. Dayton Sur., Abst. 153, show gas 3,918-27 ft. and 3,933-48 ft., drilling 3,995 ft.

Parker County: J. L. Higginbotham 1 Wheeler, SE cor. J. B. Brannon Sur., Abst. 1928, 5,000-ft. test, show gas 2,006-15 ft. and 3,795-3,805 ft., show oil 3,860-3,900 ft., est. 10 bbl. per day, drilling below 4,000 ft.

Shackelford County: Aragon Oil 1 Walls Pasture, SW cor. Sec. 39, B.A.L. Sur., 4,000-ft. test, drilling 2,925 ft.

Kleiner & Dickey Bros. 1 Miller, NW cor. Sec. 571, T.E.&L. Sur., 750-ft. test, drilling 190 ft.

R. H. Roark 1 Elliott, SW SW SE Sec. 9, L.A.L. Sur., 5,000-ft. test, cement off gas sand 830-38 ft., show gas 1,230 ft., drilling 1,233 ft.

Ellis A. Hall 1 Dyer, 220 ft. from S and W lines Sec. 73, Blk. 12, T.&P. Sur., 1,500-ft. test, drilling 1,150 ft.

U. L. Miller 1 Rodriquez, NE cor. Sec. 12, E.T. Sur., 750-ft. test, drilling 600 ft.

E. M. Dolach 1 Cook, SE SE NE Sec. 64, E.T. Sur., drilling 1,110 ft.

Somervell County: Plymouth Oil 1 Cousins, 457 ft. from SE and NE lines of tract in John Echols Sur., 7,500-ft. test, S.D. for repairs 2,771 ft.

Stephens County: C. Andrade III 1 Walls Pasture Co., NE cor. Sec. 13, O.A.L. Sur., 3,800-ft. test, preparing to drill deeper 3,649 ft.

Stonewall County: Hunter, Roberts & Shouts 1 Boyd, 660 ft. from S and E lines of NW Sec. 2, Blk. D, H.&T.C. Sur., rigging up.

Shell 1-A Patterson, 1,650 ft. from N and 990 ft. from W lines Sec. 357, Blk. D, H.&T.C. Sur., Ellenburger test, rigging up rotary, 6,800-ft. test.

Taylor County: Ce-Beth Oil 1 City of Abilene, south shore of Lake Abilene on city property, 4,000-ft. test, recovered fish, drilling 3,065 ft.

C. J. Kleiner 1 Jackson, 10,200 ft. from W and 2,100 ft. from S lines Alexander Thompson Sur. 20, 2,500-ft. test, drilling 720 ft.

W. H. Peckman 1 Perry, 330 ft. from N and W lines Lot 5, Lge. 124, Grimes County School Lands Sur., drilling 1,495 ft.

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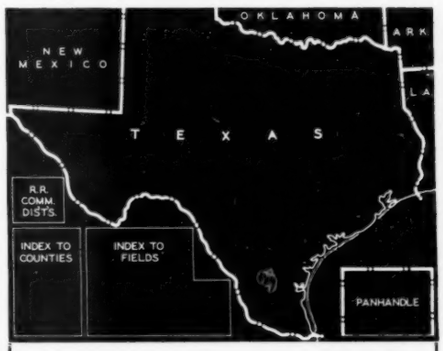

NOMENCLATURE MAP OF TEXAS

SHOWS: Oil fields in green, gas fields in red with state index giving location of each field and official field names as designated by State Nomenclature Committee. Separate index for locating counties. Insert showing Railroad Commission Districts, Cities, Towns and County Seats. Sketch above shows area covered by map. Scale 1" equals 12 miles. Size 53" x 69".

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Personal Paragraphs

T. R. ARMSTRONG, officer and director of the Latin-American producing affiliates of Standard Oil Co. of New Jersey, sailed last week on the Santa Paula for Venezuela. Mr. Armstrong was accompanied by his niece, Miss Ida Larkin.

GUIDO PIGGOTT, JR., son of GUIDO PIGGOTT, independent operator of Tulsa, and a graduate from the geological engineering class of University of Tulsa, has joined the geological department of the British American Oil Producing Co., and is now stationed at Houston, Tex.

R. M. CHURCH, engineer, Oklahoma Natural Gas Co., Tulsa, has been transferred to the Ardmore, Okla., division.

HARRY SHEPHARD, manager, Anglo-Ecuadorean Oilfields, Ltd., arrived in the United States recently on the Grace liner, Santa Elena.

W. K. WARREN, Tulsa, president Warren Petroleum Corp., has organized the advance gifts committee for the United Service Organization.

W. T. KNIGHT, JR., Wichita Falls, Tex., has been elected a director of Consolidated Oil Co., a producing concern with properties chiefly in North Texas.

HOISTON SWINNEY, Gulf Oil Corp., Maracaibo, Venezuela, is visiting relatives and friends in Shreveport, La., and vicinity, while on a 45-day vacation.

LAWRENCE S. ROCKEFELLER, New York, third son of JOHN D. ROCKEFELLER, JR., has been elected a director of Creole Petroleum Corp., joining his brother NELSON A. ROCKEFELLER, on the company's board.

J. M. SITLER, assistant purchasing agent for Standard Oil Co. of New Jersey, has been appointed purchasing agent, succeeding J. W. CASTERTON, retired. Mr. Sitler has also been elected a director of Standard of New Jersey.

WINSTON C. ALLEN, who carried on his law studies while employed in the lease and engineering division of Ohio Fuel Gas Co., at Columbus, Ohio, has received his degree of bachelor of laws from Franklin University, at Columbus.

W. D. MASON, manager of the Marcus Hook refinery of Sun Oil Co., is now wearing a 15-year service emblem presented by J. HOWARD PEW, president of the company.

GEORGE H. METTAM, recently elected a member of the board of directors of Standard Oil Co. of New Jersey, was honored at a testimonial dinner at the Plaza Hotel, Jersey City, N. J., attended by more than 400 company employes and friends. Mr. Mettam was presented with a life-sized bronze bust.

GEORGE J. MURRAY, JR., public relations manager, Tide Water Associated Oil Co., has been named director of the company's defense-savings program by which it is hoped the employes will raise $1,000,000 for national defense. Each employe has been presented a defense-savings-stamp album containing a $1 stamp.

Four new directors have been appointed to the board by Sun Oil Co. They are JOHN G. PEW, Dallas, Tex., assistant to vice president, J. EDGAR PEW; WALTER C. PEW, general sales manager; FRANK S. REITZEL, assistant to the president, and CLARENCE H. THAYER, manager of the engineering division, manufacturing department.

VICTOR I. COPPARD, on leave of absence from the Texas Co. where he was formerly in charge of topographic mapping and engineering drafting at the Los Angeles, Calif., office, has been appointed a captain in the U. S. Army Intelligence Department, and is assigned to the Antiaircraft Corps stationed at Camp Haan, near Riverside, Calif. Four months ago Mr. Coppard, then a first lieutenant, was selected for special training at the reserve officers' school in Washington, D. C. Upon his return to California he was placed in charge of public relations at Camp Haan.

Do You Remember?

From The Oil and Gas Journal Files

25 YEARS AGO

When peace is restored in Mexico it is probable that the immense acreage obtained in that country, some time ago, by J. S. Cosden interests, of Tulsa, will be developed in an active way.

Henry L. Doherty, widely known as president of the big New York company bearing his name, recently delivered an address on "Governmental Attitude Toward Public Utilities." He said in part: " . . . These utilities will not do anything until they are more certain of governmental attitude."

There is rejoicing at Sedan, Kans., over the drilling in of a 50-bbl. well within 3 miles of the town, on the north side.

M. A. Cypher, an oil-well driller of Butler, Pa., has returned from the Orient after an absence of 4 years. Like other oil men returned from India, Mr. Cypher had little to say about the oil affairs in that distant region.

20 YEARS AGO

Brig. Gen. George C. Rickards, of Oil City, Pa., widely known among oil-country people, has been recommended by President Harding as chief of the militia bureau of the War Department.

Victor C. Svimonoff (Ohio State University and University of Pittsburgh, class 1912), formerly manager and chief engineer of the Molot Oil Well Drilling Contractors, of Baku, Russia, has arrived in New York from Russia and has some thrilling stories to tell of his experience with the Bolshevists.

10 YEARS AGO

A stabilization plan offered to the operators in the East Texas district at a meeting in Tyler, Tex., was put up for a vote at another meeting later and adopted by a vote of 2 to 1.

William Kammerer, 62, founder of the Columbia Oil Co., and for many years field manager for the Associated Oil Co., in California, died at his home in Los Angeles, Calif.

E. S. BLEECKER, chief geologist, Mene Grande Oil Co., has returned to New York after a brief visit to Venezuela.

MICHAEL L. BENEDUM, of Benedum & Trees, Pittsburgh, Pa., has received an honorary degree from Allegheny College, Meadville, Pa.

ABEL DUCLOUS, a representative of the Argentine Government Oil Fields, has returned to Argentina after a visit in the United States.

F. F. WRIGHT, production department of Sinclair Prairie Oil Co., has been transferred from Nowata, Okla., to Ardmore, Okla.

ROBERT MOORE, Moore Drilling Co., was severely injured at Songbird, Pa., recently when he was struck on the head by an oil-well bailer. He was taken to a Bradford, Pa., hospital.

F. W. FLOYD, vice president and general manager, Standard Oil Co. of Venezuela, and a former vice president and head of the production department of Carter Oil Co., Tulsa, is a visitor in Tulsa.

W. GRAYSON RAY, for the past several years scout for Magnolia Petroleum Co. in the Wichita Falls, Tex., district, has been transferred to the Dallas, Tex., offices of the company and promoted to head scout in North Texas.

DR. F. W. LEE, chief geophysicist of the U. S. Geological Survey, has been added to the list of speakers on the program of the annual meeting of the Pennsylvania Grade Crude Oil Association. He will describe the electrical ground resistivator in which he has done much research.

A. C. LANDER, treasurer, Caracas Petroleum Co., sailed last week for Venezuela.

WILLIAM C. FASTNOW, of Los Angeles, Calif., has been elected vice president and chairman of the board of Kern Ridge Oil Co.

EDWARD ROBERTS and CLAUDE S. WILCOX, officials of International Petroleum Co., recently arrived in this country en route from Peru.

J. J. CONRY, retired president of Carter Oil Co., Tulsa, will leave shortly for New York City to sail for Ecuador to join Mrs. Conry, who flew there last month.

E. R. SWANSON, safety engineer, Colonial Beacon Oil Co., Everett, Mass., is the new chairman of the National Safety Council's Petroleum Section, New England division.

EVERETT S. SHAW, who has been in Argentina for several years in charge of geological exploration for the government, has returned to his home in Denver, Colo.

R. O. (SLIM) HARRIS, formerly tool pusher for Loffland Brothers, has been made district manager for McQueen & Clevenger Drilling Contractors, which recently opened offices at Houston, Tex.

BART DeLAAT, division production engineer, Pure Oil Co., Olney, Ill., has been transferred to Chicago where he will become assistant chief production engineer. The position of division engineer at Olney will be filled by LAWRENCE OGDEN, formerly at Fort Worth, Tex., who will be assisted by C. F. TERREL, formerly at Chicago.

EDGAR CLAYTON, supervising engineer for Drilling & Exploration Co. in Brazil, has returned to his home in southern California for a month's vacation. Making the round trip by air, he will arrive back at his headquarters in Bahia about July 1. Bahia is the headquarters for oil-exploration operations being carried on by the Brazilian Government.

Back to Texas

An interesting story on "Travels of a Geologist" might well be written by Lynn K. Lee, division geologist for Pure Oil Co. at Fort Worth, Tex. Mr. Lee is a native Texan so the Fort Worth assignment is really back home for him.

L. K. LEE

A less tenacious character might have been frustrated by the 13 moves in the first few months of his service with Pure which dates back to 1925. Since a 3-year assignment in Arkansas, starting in 1926, moves for Mr. Lee have been less frequent. Still the company has sent him into areas of greatest activity and in the past 12 years he has served the geological department in Oklahoma, Chicago, Saginaw, Mich., Olney, Ill., and Texas. Mr. Lee was born in Dallas, Tex., graduated from public school in Gainesville, Tex., attended Wentworth Military Academy, and graduated from the geological department of Oklahoma University.

His technical training in geology was augmented by practical work with his father, John E. Lee, a producer and operator in Oklahoma, who used his son's talents during school-vacation periods.

Connection with Pure's geological department started in June 1925. He was married in November 1925, and during the next 6 months there were 13 moves involved by duties assigned Mr. Lee. He finally landed in Arkansas, stayed there 3 years and then moved to Tulsa. He was again transferred in 1931 to the home office at Chicago and in 1935 the company sent him to Saginaw, Mich., where a development program was under way. The Illinois basin play next brought about Mr. Lee's transfer to Olney, Ill., where he stayed until 1940, when he was moved to Texas.

Hobbies include hand ball, fishing, golf, table tennis, and raising dogs, with emphasis on the latter. In Arkansas, the Lees raised Great Danes and later shifted to Chows. In Olney, Ill., they raised Scotties for their friends. The neighbors have always known the Lees as the family with a back yard full of dogs.

LARRY O. COX has been appointed manager of the Francitas Gas Co., with headquarters at Houston, Tex.

C. F. BARBER, formerly geologist for Forest Development Co., has resigned and has opened offices at San Antonio, Tex., as consulting geologist.

GEORGE B. JOURNEAY has been appointed manager of the Trans-Tex Production Co., with headquarters at Houston, Tex.

JIM SHORT, with the Shell Oil Co., Inc., formerly in the Iowa district, has been transferred to the Black Bayou, Louisiana, district as production superintendent.

C. J. WARD, exploitation engineer in the West Texas division for Shell Oil Co., Inc., has volunteered for a job in England for the duration of the war and is preparing to leave for London at an early date.

DR. C. E. DOBBIN, of the U. S. Geological Survey in Denver, Colo., was awarded an honorary degree of doctor of science at Colby College, Waterville, Me., the past week, the twenty-fifth anniversary of his graduation.

A. C. ANDREWS, petroleum engineer for the Stanolind Oil & Gas Co., at Luby, Tex., has been transferred to the South Jennings field, near Jennings, La., as superintendent of the company's new recycling plant now under construction.

H. L. RIGGS, drilling superintendent for Lupher Drilling Co., has been transferred to Mount Pleasant, Mich., from Salem, Ill., where he has been in charge of the company's operations since the first of this year.

FRANK BELLISLE, of General Petroleum's Ventura division, has been elected commander of the Wallace Chaffee Post of Veterans of Foreign Wars. A former marine who served with the fourth and sixth regiments in China, he has been with General Petroleum since 1929.

EMIL HUGUENIN, who has been deputy supervisor for the Division of Oil and Gas in the Los Angeles Basin for a number of years, has been appointed chief deputy oil and gas supervisor, and in his new capacity, which was achieved in competitive examinations, will make his office in San Francisco, Calif. He succeeds J. B. Case, deceased.

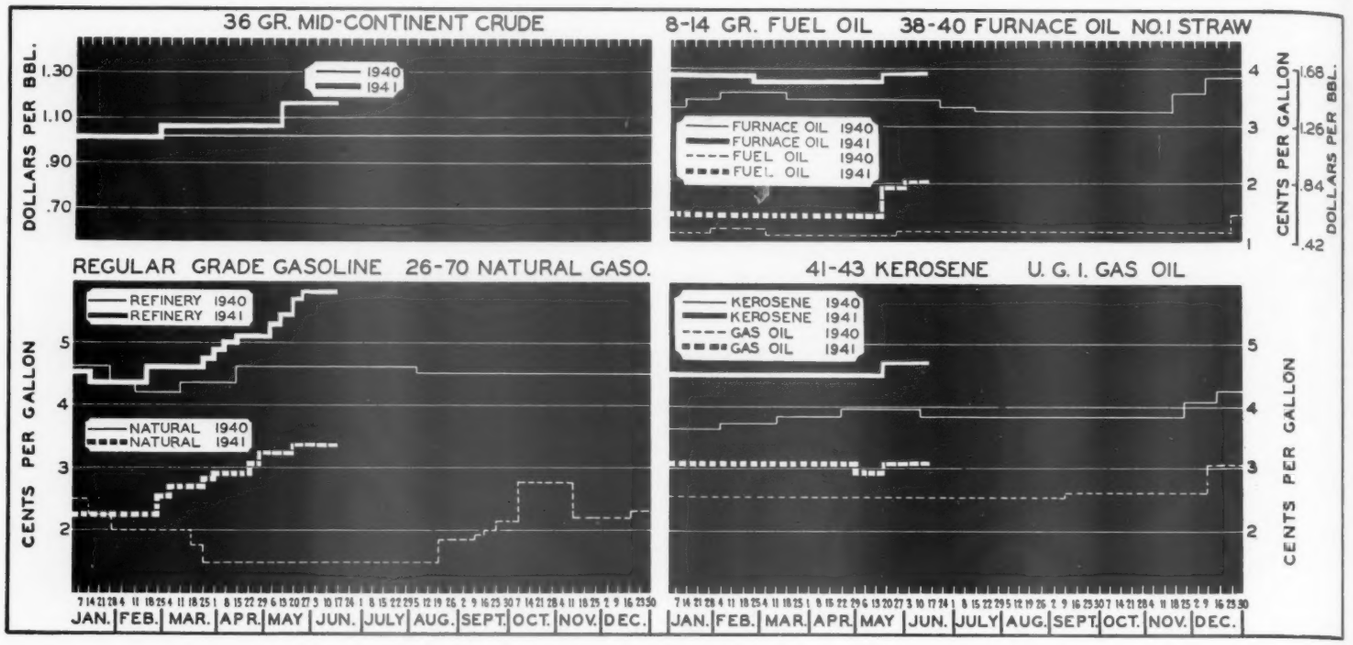
JAMES W. VAIDEN, manager of the natural-gasoline and natural-gas department, Skelly Oil Co., Tulsa, was elected vice president of the company in charge of manufacturing at a meeting this week of the board of directors. He will have executive supervision over the natural-gasoline and natural-gas departments and of the company's refinery at El Dorado, Kans. He will continue to maintain his residence in Tulsa.

H. C. O. CLARK, superintendent for Pure Oil Co. in the San Joaquin Valley, California, has returned from a trip East where he attended meetings in Chicago and also the Kentucky Derby at Louisville, Ky.

BERT E. DEVERE, general manager, Pathfinder Petroleum Co., Los Angeles, Calif., has been elected president of the Independent Refiners Association, succeeding R. E. HINES, Caminol Co., who resigned. Previous to the election, Mr. Devere had been first vice president of the Independent Refiners. Other appointments were C. A. JOHNSON, president, Socal Oil & Refinery, was named a director, taking the place on the board left vacant by Mr. Hine's resignation; M. M. McCALLEN, director.

C. F. BUCHNER, formerly vice president and general manager of W. C. McBride, Inc., St. Louis, Mo., has resigned from the company due to ill health which kept him from his desk for almost a year. Mr. Buchner is residing at present at Webster Groves, Mo.

JOHN McFAYDEN, vice president and general manager of the Rocky Mountain and Pacific Coast development work for Ohio Oil Co., has been placed on retirement after 47 years of continuous service. His place on the board of directors has been filled with the election of A. M. GEE. He has been succeeded as general manager of the Rocky Mountain area by W. M. HOLLAND, while J. B. SUTHERLAND becomes manager of the Pacific Coast division.



Representative Mid-Continent Quotations on Crude Oil and Refined Products, Basis Oklahoma (Group 3)

Rebound of Mid-Continent Shipments Presses Suppliers to Fill Orders

By H. STANLEY NORMAN

MID-CONTINENT refiners today were rounding out the largest week of product shipments in their history. Motor fuel held at refineries, loading terminals and in tank cars at shipping racks pending the freight-rate reduction June 11 was being rushed with all possible speed to customers in the middle western states who had reduced inventories to minimum working requirements in the 15 days preceding the effective date.

Still, there was not the complete cessation of motor-fuel shipments during the first 2 weeks of June that would have normally preceded such a substantial reduction in delivery costs. More extended advantage of reduced transportation was denied tank-car buyers in the middle western states because there has been no letup in record demand. Furthermore, consumption at the accelerated rate prevailing in the first 5½ months of this year has made distributors more dependent on regular deliveries. Storage capacity is insufficient to warrant or permit long-term preparation for incidental reductions in cost.

Stock Turnover Rapid

Consequently, jobbers in the northern states delayed shipping instructions on all motor fuel they could possibly do without. The more rapid turnover of stocks at the current rate of consumption is such, however, that refiners felt more keenly the upswing of inquiries and orders after June 11 than any depressing influence of delayed shipping instructions preceding the freight reductions.

Savings in freight rates were passed on to consumers in the "normal" marketing sections of the Middle West. However, there was no corresponding reduction in the "subnormal" areas. Use of the saving in freight charges on motor fuel from the Mid-Continent reduces the tank-wagon margin between "normal" and "subnormal" prices to the narrowest point, in some instances, since 1937.

The respite from incessant shipping instructions was welcomed by most Mid-Continent refiners. Even since normal, or slightly inflated, movement resumed last week some refiners have been compelled to buy in the spot market to cover commitments. Heavy rains which covered most of the Mid-Continent and Middle West last week delayed pipe-line and producing operations to some extent. Consequently, some refiners were unable to take advantage of the opportunity to augment inventories.

Refined Oil Market Barometer

Movement of motor fuel from the Mid-Continent refining district to the middle-western market was revived this week with uncommon vigor. Refiners were rushed to catch up with jobber demand which had been retarded during the first 10 days of June pending a reduction in freight rates. Lubricating-oil manufacturers are unable to hold their own with shipping instructions and gasoline supplies are tightly held.

MID-CONTINENT: Prices for all products are on firm ground.

GULF COAST: Tanker limitations retarding movement. Prices steady.

CALIFORNIA: Fuel oils firm. Price-control action key to future.

PENNSYLVANIA: Lubes and gasoline slightly higher.

CHICAGO: Heavy fuel oils are outstandingly strong.

There was no change this week in the motor-fuel quotations prevailing in the Mid-Continent. Refiners are reluctant to make a move in the market until they know something more about the background of the questionnaires received last week from Thurman Arnold, assistant attorney general in charge of the Antitrust Division, Department of Justice. Information sought by Mr. Arnold includes a breakdown of sales by percentages so far this year to major companies, jobbers and dealers compared to a similar period in 1940. Refiners receiving the questionnaire speculated that the inquiry was for the purpose of determining what part major-company buying may have played in price advances occurring since the latter part of March.

Majors Buy Sparingly

Small refiners reported that major-company buying this year is approximately static from a percentage standpoint with business a year ago. Some of the refiners who sell principally on the spot market declared that major-company purchases accounted for a small fraction of their aggregate volume.

The Mid-Continent lubricating-oil market, while not nearly so spectacular as that for gasoline, is, nevertheless, one of the features of the current situation. All large manufacturers of Mid-Continent lubricating oils are behind on their orders and are losing ground in this respect with each day's operations. There is no one particular phase of lubricating-oil demand dominating the present market. Rather, there is strong demand for all grades from the highly refined solvent stocks down to grades with most liberal specifications.

A substantial part of the higher demand for lubricating oils is coming, so refiners believe, from industries manufacturing defense materials.

Few Sales Are Reported in East At Prices Above Quotations

By J. P. O'DONNELL

NEW YORK, June 17.—Only small quantities of motor fuel, kerosene and fuel oil are available on the spot market as an increasing number of suppliers are limiting sales to regular customers. As a result, the nominal status of the East Coast market continued during the past week. There were unconfirmed reports that some sales of products have been made at prices above those generally quoted.

Major marketers in the New York Harbor area continue to quote 72-74-octane gasoline at 8 cents while at other points along the Atlantic seaboard quotations range from 7 cents at South Atlantic points to 8.2 cents at Boston, Mass., and Providence, R. I. Kerosene is quoted generally at 5.2 cents at New York area and No. 2 fuel oil at 4.9 cents. The latter price is offered by all major suppliers despite the report of a large quantity having been moved at 5.1 cents during the previous week, 0.3 cent above the generally posted barge price.

Reports of scattered sales above regular posted prices were disturbing inasmuch as the Office of Price Adjustment and Civilian Supply has forbidden increases in this area unless supported by increased transportation costs or by increases in primary markets. Since the reported sales are being made at higher than regular prices because of the tight condition of the market, they are in apparent violation of the implied order of the federal price authorities.

While coastwise transportation costs were unchanged last week, a new high of 90 cents a barrel was reported reached in the Venezuela to north-of-Hatteras run. This rate was reported paid on the dirty tanker Santa Maria which was recently engaged. Since much of the residual fuel oil consumed in the East Coast district is imported from Venezuela, an increase in prices for Bunker C fuel oil may result. The Venezuela-north-of-Hatteras tanker-rate advance is probably at least partially responsible for the improved condition of No. 6 fuel. Bunker C fuel oil is held at a minimum of $1.35 per barrel in the New York Harbor area.

Further evidence of the tightness existing in the tanker market is contained in the report that a Norwegian whaler has been chartered to carry a cargo of fuel oil from a north-of-Hatteras port to Australia. Damaged tankers continue to arrive at East Coast shipyards and some of them, after being repaired, will enter domestic coastwise service. The Swedish tanker Capella, reported to have suffered bomb damage, arrived in New York last week and will be in drydock a week before entering the Latin America-north-of-Hatteras trade.

Gulf-to-north-of-Hatteras rates remain unchanged, but the almost complete lack of bottoms made this market nominal some time ago. Rates are reported at 50 cents for gasoline, 53 cents for kerosene and 57 cents for heating oil and from 50 to 57 cents for crude oil, according to the gravity. However, bids substantially higher than these rates have been quoted without attracting tankers.

Some relief for the inadequate petroleum transportation facilities will be provided by new barge construction. The American Bureau of Shipping reports 32 oil barges under construction as of June 1 and one of the large barge-building companies has reportedly developed a plan for converting hooper-type coal barges into oil carriers "because of the urgent demand for tank barges on inland rivers." These converted barges will have a capacity of 238,000 gal. in contrast to the standard tank-barge capacity of 278,000 gal.

Despite the large number of tankers already diverted, the statistical position of the oil industry on the East Coast has yet to reflect this diversion. Gasoline stocks on the East Coast increased again during the first week in June and on June 7 were up to 21,965,000 bbl., an increase of 300,000 bbl. from the May 31 total and at that time were at the highest point of the year. Increases in light and heavy fuel-oil stocks were also reported in that week. Gas oil and distillate inventories on the East Coast rose 500,000 bbl. to 9,548,000 bbl. and the residual fuel-oil stocks rose 565,000 bbl. to 8,578,000 bbl.

While these stocks are higher than they were a year ago, marketers dependent on major companies for supplies remain very much concerned over the prospects of meeting next winter's demand for heating oil. This concern is illustrated in 1941-42 contracts, some of which carry a clause reading, "If seller's supplier shall suffer any loss of tanker tonnage, or if compliance with an order or request of any governmental authority shall reduce the tanker tonnage available for the normal movement of crude petroleum or refined products the obligation to make deliveries hereunder may be reduced at seller's option approximately in proportion to such loss or reduction. Seller shall not be required to make up deliveries omitted on account of such causes."

East Coast refiners have so far been able to maintain runs at approximately the same level as in 1940. Runs to stills in the last week for which data are available totaled 600,000 bbl. and gasoline production of 1,708,000 bbl. in that week was the highest for any week of this year. Prospects for "gasolineless Sundays" were denied not only by the statistical report but also by the statement of New Jersey Rep. Elmer H. Wene, who said that he had been advised by Secretary Ickes that such conservation measures would not go into effect until after Labor Day. Mr. Wene said that he had also been informed that the prospective shortage of oil products in the East was not expected to become serious before the fourth quarter of this year. Later, Secretary Ickes denied making such a statement.

Gulf Coast Market Ruled By Scarcity of Tankers

HOUSTON, Tex., June 17.—The anticipated strengthening of Gulf Coast refinery prices failed to materialize early this week. Lack of spot sales and the inability to move material continued to hold the market in a stagnant condition. No general improvement is anticipated until the transportation situation is improved.

Gasoline weakened and prices were unsteady as the result of 80 (research) octane material being offered at 5½ cents. This material has been for the past several weeks extremely strong at 5⅞ cents and higher prices were still being asked by most sellers. The only explanation for the low price is that it was distress material and only a limited amount at this price was expected to be offered.

Two cargoes at 68-70 unleaded material were reported moved from Corpus Christi at 5¾ cents. No increase in business was reported as the result of lowering of tank-car rates which was expected to increase shipments to the interior.

Gas oils were being offered at 3¼ to 3⅜ cents but no business was reported. Heavy fuel quotations were firm at 85 cents while diesel bunkers held at $1.45.

A.P.I. Weekly Refinery Statistics

Week Ended June 14, 1941

	Capacity reporting (per cent)	Total gasoline stocks (bbl.)	Residual fuel-oil stocks (bbl.)	Gas oil and distillate stocks (bbl.)	Daily crude runs (bbl.)
East Coast	100.0	21,705,000	8,109,000	9,405,000	558,000
Appalachian	91.0	3,024,000	419,000	369,000	130,000
Ind., Ill., and Ky.	90.2	16,968,000	3,503,000	3,350,000	616,000
Okla., Kans., and Mo.	76.9	7,762,000	2,006,000	1,355,000	309,000
Inland Texas	59.6	2,270,000	1,374,000	380,000	135,000
Texas Gulf	89.2	13,285,000	7,355,000	6,926,000	913,000
Louisiana Gulf	97.6	3,266,000	1,745,000	1,289,000	129,000
N. Louisiana and Ark.	51.5	478,000	493,000	295,000	21,000
Rocky Mountains	56.0	1,678,000	543,000	138,000	66,000
California	87.3	15,622,000	66,095,000	10,828,000	547,000
Total reported	86.2	86,058,000	91,642,000	34,335,000	3,424,000
Est. unreported		6,420,000	1,540,000	725,000	331,000
Est. total		†92,478,000	93,182,000	35,060,000	3,755,000
*Est. total previous wk.		‡92,932,000	93,384,000	34,305,000	3,880,000
*June 15, 1940		97,700,000	103,699,000	30,545,000	3,620,000

*Bureau of Mines. †Includes 7,492,000 bbl. aviation gasoline. ‡Revised.

Stocks of Crude Oil in the United States

(BUREAU OF MINES ESTIMATE)

Week ended June 7, 1941	260,956,000 barrels
Week ended May 31, 1941	262,356,000 barrels
Week ended June 8, 1940	259,706,000 barrels

Figures do not include stocks of heavy, unrefinable California crude.

RETAIL OIL MARKETS...

Tank-wagon and filling-station prices on gasoline and kerosene furnished by larger marketing firms

Prices as of June 17, 1941

Taxes

The gasoline quotations given in the following tables include the 1½-cent federal tax, as well as state, county, and city taxes. The gasoline is the regular or standard grade. In most areas lower grades and a premium grade also are available.

Standard Oil Co. (Indiana)

	Gasoline Tank wag.	Dlr.	Inc. tax	Kero. tank wag.
Chicago, Ill.	15.1	13.1	4.5	10.3
Decatur	13.9	12.4	4.5	9.0
Joliet	16.4	13.6	4.5	10.3
Peoria	16.2	14.2	4.5	10.1
Quincy	14.9	13.4	4.5	10.0
Davenport, Ia.	16.2	14.7	4.5	10.1
Des Moines	15.9	13.9	4.5	9.8
Mason City	16.2	14.7	4.5	10.1
Duluth, Minn.	17.7	16.2	5.5	10.6
Mankato	17.4	15.9	5.5	10.3
Minneapolis	17.4	15.9	5.5	10.3
La Crosse, Wis.	17.4	15.9	5.5	10.3
Green Bay	17.7	16.2	5.5	10.6
Milwaukee	17.6	16.1	5.5	10.5
Detroit, Mich.	15.9	14.4	4.5	9.6
Grand Rapids	15.9	14.4	4.5	9.6
Saginaw	15.9	14.4	4.5	9.6
Evansville, Ind.	16.9	15.4	5.5	9.6
Indianapolis	17.1	15.2	5.5	9.8
South Bend	17.5	16.0	5.5	10.2
Fargo, N. D.	18.4	16.9	5.5	11.3
Huron, S. D.	17.8	16.3	5.5	10.7
Kansas City, Mo.	14.4	12.9	4.5	9.1
St. Louis	14.4	12.9	4.5	9.8
St. Joseph	15.7	14.2	4.5	8.9
Wichita, Kans.	14.8	12.7	4.5	8.9

*State tax 2 cents, 1-cent city tax, and 1½-cent federal tax.

Exclusive of state general sales taxes.

Discounts to commercial consumers. On purchases per month off tank-wagon prices: 1,000 gal. or more, 1.5 cents off, minimum delivery 25 gal.

Stanolex Fuel Oil in Chicago

Effective June 4, 1941, f.o.b. Chicago, tank-wagon prices: Standard heater oil, 1-99 gal., 8.75 cents; 100-149 gal., 7.75 cents; 150 gal. and over, 7.25 cents. Stanolex fuel oil No. 1, 1-99 gal., 8.5 cents; 100-149 gal., 7.5 cents; 150-399 gal., 7.25 cents; 400 gal. and over, 6.75 cents. Stanolex furnace oil, 1-99 gal., 8.5 cents; 100-149 gal., 7.5 cents; 150-399 gal., 7.25 cents; 400 gal. and over, 6.75 cents. Stanolex fuel oil A, 1-99 gal., 7.75 cents; 100-399 gal., 6.75 cents; 400-749 gal., 5.75 cents; 750 gal. and over, 5.0 cents. Stanolex fuel oil B, 1-99 gal., 7.75 cents; 100-399 gal., 6.75 cents; 400-749 gal., 5.75 cents; 750 gal. and over, 5.0 cents. Stanolex Bunker C fuel oil, 1-399 gal., 6.25 cents; 400-999 gal., 5.25 cents; 1,000 gal. and over, 4.25 cents.

Ohio

STANDARD OIL CO. OF OHIO

	Gasoline Cons'r tank wag.	Dlr.	Divided Inc. tax	Kero. tank wag.
Ohio points	16.0	15.0	5.5	*9.0

*Includes state tax of 1 cent.

Southern District

STANDARD OIL CO. (KENTUCKY)

	Gasoline Cons'r tank wag.	Net dlr.	Inc. tax	Kero. tank wag.
Atlanta, Ga.	17.75	17.75	7.5	10.0
Augusta	17.75	17.75	7.5	9.5
Macon	17.75	17.75	7.5	10.0
Savannah	16.75	16.75	7.5	9.0
Birmingham	18.25	18.25	8.5	8.0
Mobile	18.25	18.25	9.5	8.5
Montgomery	19.25	19.25	9.5	10.0
Jackson, Miss.	16.75	16.75	7.5	9.0
Vicksburg	16.75	16.75	7.5	8.5
Jacksonville, Fla.	17.75	17.75	8.5	8.0
Miami	17.75	17.75	8.5	8.0
Pensacola	18.25	18.25	9.5	8.0
Tampa	17.75	17.75	8.5	8.0
Lexington, Ky.	16.75	16.75	6.5	9.0
Covington	15.0	15.0	6.5	9.0
Louisville	16.25	16.25	6.5	8.5
Paducah	16.25	16.25	6.5	8.5

Price basis to tank-wagon consumers, effective January 4, 1937, 3 cents per gallon below tank-wagon price.

Montgomery, Ala., has a county tax of 1 cent per gallon, and a city tax of 1 cent per gallon on gasoline, in addition to state tax, and 1 cent per gallon on kerosene. Mobile, Ala., has a city gasoline tax of 2 cents per gallon; Birmingham, Ala., has a city gasoline tax of 1 cent per gallon; Pensacola, Fla., has a city gasoline tax of 1 cent. All are included in the table.

Atlantic Coast District

STANDARD OIL CO. OF NEW JERSEY

	Gasoline Cons'r tank car	Dlr. tank wag.	Inc. tax	Kero. tank wag.
Atlantic City	13.0	14.0	4.5	7.8
Newark	13.0	14.0	4.5	7.8
Annapolis	13.85	15.35	5.5	9.5
Baltimore	13.25	14.75	5.5	8.5
Cumberland	14.65	16.15	5.5	10.0
Washington, D. C.	11.50	13.00	3.5	9.0
Danville, Va.	15.45	17.45	6.5	10.25
Norfolk	14.25	16.25	6.5	10.00
Petersburg	14.55	16.55	6.5	11.00
Richmond	14.55	16.55	6.5	11.00
Roanoke	15.75	17.75	6.5	10.50
Charles'n, W. Va.	15.55	18.05	6.5	11.5
Parkersburg	14.85	17.35	6.5	11.2
Wheeling	15.25	17.35	6.5	11.8
Charlotte, N. C.	17.40	18.90	7.5	9.3
Hickory	17.95	19.45	7.5	10.3
Mount Airy	17.80	19.30	7.5	9.5
Raleigh	17.15	18.65	7.0	10.3
Salisbury	17.45	18.95	7.5	10.7
Charleston, S. C.	15.25	17.75	7.5	9.25
Columbia	16.10	18.60	7.5	(*)
Spartanburg	16.80	19.30	7.5	(*)

Price basis to Essolene undivided dealers: Dealer tank-wagon price less 0.5 cent per gallon. Price basis to commercial consumers, effective March 8, 1937, in Maryland, District of Columbia, and in Arlington and Fairfax counties in Virginia and March 12 in New Jersey: To contract accounts purchasing at least one full compartment at a time by hose connection, on yearly purchases: From 2,500 to 100,000 gal., consumer tank-wagon price at time and place of delivery: 100,000 gal. per year, consumer tank-car price plus 0.5 cent per gallon. Consumer tank-wagon price generally will be equivalent to dealer tank-wagon price less 0.5 cent per gallon.

Effective January 16, 1939, in North Carolina the commercial consumer schedule became as follows: Single deliveries of 50 gal. or more, consumer tank-wagon price. Single deliveries of less than 50 gal., 4 cents per gallon over consumer tank-wagon price. Generally the posted consumer tank-wagon price will be equivalent to the dealer price, less 0.5 cent per gallon. The above policy also applies in South Carolina, effective January 23, 1939.

*Kerosene business of the company at these points now exclusively handled by dealers.

Pennsylvania and Delaware

ATLANTIC REFINING CO.

	Gasoline Cons'r tank car	Dlr. tank wag.	Inc. tax	Kero. tank wag.
Philadelphia, Pa.	14.0	15.0	5.5	10.0
Pittsburgh	14.5	15.5	5.5	10.5
Allentown	14.5	15.5	5.5	10.5
Erie	14.5	15.5	5.5	10.0
Scranton	14.5	15.5	5.5	10.5
Altoona	14.5	15.5	5.5	10.5
Dover, Del.	....	15.5	5.5	10.5
Wilmington	....	15.0	5.5	10.0

Price basis to undivided dealers, dealer tank-wagon price less 0.5 cent per gallon.

Discount on kerosene, 2 cents per gallon off tank-wagon price on tank-wagon deliveries of 25 gal. or more at one time.

Pacific Coast Territory

STANDARD OIL CO. OF CALIFORNIA

	Gasoline Tank truck	Serv. sta.	Inc. tax	Kero. tank wag.
San Francisco	17.5	18.5	4.5	11.5
Los Angeles	17.0	18.0	4.5	10.0
Fresno, Calif.	18.5	19.5	4.5	12.5
Phoenix, Ariz.	21.5	22.5	6.5	*17.5
Reno, Nev.	20.5	21.5	5.5	13.5
Portland, Ore.	20.0	21.0	6.5	13.5
Seattle, Wash.	20.0	21.0	6.5	13.5
Spokane	21.5	22.5	6.5	16.5
Tacoma	20.0	21.0	6.5	13.5

*Includes 5-cent state tax.

Discount to dealers: On gasoline, off tank-wagon price, to 100 per cent dealers, 3 cents. To commercial consumers: On tank-wagon price: on single deliveries of 40 gal. and over, advance quantity discount extended at time of delivery, 3 cents. Service-station schedule applies on single deliveries less than 40 gal. On kerosene in tank-car, transport-truck, and trailer delivery, 3 cents off tank-wagon price; plant deliveries to jobbers, 2.5 cents below tank wagon.

March 18, 1939, split dealer discount was canceled.

New York and New England

SOCONY-VACUUM OIL CO., INC.

	Gasoline Cons'r tank car	Dlr.* tank wag.	Inc. tax	Kero. tank wag.
Albany	14.5	14.7	5.5	7.6
Met. New York	14.7	14.9	5.5	7.9
Buffalo	14.8	15.0	5.5	8.0
Rochester	15.4	15.6	5.5	8.8
Syracuse	15.1	15.3	5.5	8.7
Portland, Me.	14.9	15.1	5.5	8.0
Manchester, N. H.	15.9	16.1	5.5	8.9
Burlington, Vt.	15.5	15.7	5.5	8.2
Boston, Mass.	13.5	13.7	4.5	7.9
Worcester	14.1	14.3	4.5	8.0
Hartford, Conn.	14.2	14.4	4.5	7.5
New Haven	13.6	13.8	4.5	6.8
Providence, R. I.	13.6	13.8	4.5	7.7

*Undivided.

Effective August 8, 1940, the company changed its commercial consumer policy in New York and New England to the following:

Full compartment deliveries: Accounts buying less than 20,000 gal. annually, 0.5 cent above the commercial-consumer price; accounts buying from 20,000 to 120,000 gal. annually, commercial-consumer price; accounts buying 120,000 gal. annually and above, 0.25 cent off consumer price. Split compartment deliveries: Delivery of less than a full compartment, 250 gal., commercial-consumer price plus 1 cent. Steel-barrel deliveries: Commercial price plus 3 cents.

Rocky Mountain District

CONTINENTAL OIL CO.

	Gasoline Tank wag.	Inc. tax	Kero. tank wag.
Denver, Colo.	14.5	5.5	11.0
Grand Junction	18.0	5.5	12.5
Pueblo	14.5	5.5	9.5
Casper, Wyo.	17.0	5.5	12.0
Cheyenne	16.0	5.5	11.5
Billings, Mont.	18.0	6.5	12.5
Butte	17.0	6.5	13.5
Great Falls	17.0	6.5	12.5
Helena	17.0	6.5	13.0
Salt Lake, Utah	18.5	6.5	14.5
Boise, Idaho	†20.1	6.5	16.5
Twin Falls	†21.1	6.5	17.0
Albuquerque, N. M.	*17.5	7.0	10.0
Roswell	*15.5	7.0	8.5
Santa Fe	‡18.0	7.5	10.0

*Includes city tax of 0.5 cent. †Includes toll-bridge tax of 1 mill. ‡Includes city tax of 1 cent.

Tank wagon represents price to consumers. Dealer represents price to dealers. If no dealer price is quoted, the tank-wagon price applies to all classes of trade.

Central South District

STANDARD OIL CO. OF LOUISIANA

	Gasoline Cons'r tank car	Dlr. tank wag.	Incl. tax	Kero. tank wag.
New Orleans, La.	15.25	17.25	8.5	‡10.0
Baton Rouge	15.25	17.25	8.5	‡10.5
Alexandria	15.25	17.25	8.5	‡10.5
Lafayette	15.50	18.00	8.5	‡10.0
Lake Charles	15.50	18.00	8.5	‡10.0
Shreveport	14.50	17.00	8.5	10.0
Knoxville, Tenn.	18.00	20.50	8.5	12.5
Memphis	16.25	18.75	8.5	10.5
Chattanooga	17.50	18.50	8.5	12.0
Nashville	17.75	19.5	8.5	10.0
Bristol	18.25	18.75	8.5	12.0

Essolene at dealer price less 0.5 cent per gallon to undivided dealers.

‡Includes 1-cent state tax.

Price basis to commercial consumers: Effective May 15, 1937, deliveries of 50 gal. or more in one territory take posted consumer tank-wagon price. Accounts taking deliveries of less than 50 gal. at one time pay posted consumer tank-wagon price plus 4 cents per gallon. Generally, the posted consumer tank-wagon price will be equivalent to the dealer price less 0.5 cent per gallon. Kerosene prices include 1-cent state tax.

Effective February 24, 1939, the company reestablished in New Orleans the commercial consumer policy on motor fuel effective in the rest of the state.

Effective December 12, 1938, the company revised its commercial consumer policy on motor fuel in New Orleans, as follows: Single deliveries of less than 50 gal., consumer tank car plus 2 cents per gallon 50 to 199 gal., consumer tank car plus 1 cent per gallon; 200 gal. and over, consumer tank car plus 0.5 cent per gallon.

Oklahoma and Arkansas

CONTINENTAL OIL CO.

	Gasoline Tank wag.	Incl. tax	Kero. tank wag.
Texarkana, Ark.	14.0	5.5	6.0
Fort Smith	15.5	7.0	6.5
Little Rock	17.25	8.0	8.0
Muskogee, Okla.	15.5	7.0	8.0
Oklahoma City	15.0	7.0	8.0
Tulsa	15.0	7.0	8.0

Tank wagon represents price to consumers. If no dealer price is quoted, the tank-wagon price applies to all classes of trade.

Nebraska

STANDARD OIL CO. OF NEBRASKA

	Gasoline Tank wag.	Dlr.	Incl. tax	Kero. tank wag.
Omaha	16.5	13.9	6.5	10.3
McCook	18.0	14.9	6.5	9.0
Norfolk	18.5	16.9	6.5	10.4
North Platte	18.8	17.0	6.5	10.7
Sscottsbluff	17.9	15.0	6.5	9.5

Discounts to commercial consumers for tank-wagon deliveries covered only by standard commercial consumers contract, effective January 1, 1935.

Texas

	Gasoline Tank wag.	Serv. sta.	Incl. tax	Kero. tank wag.
Dallas, Tex.	11.5	15.5	5.5	6.0
Fort Worth	11.5	15.5	5.5	7.0
Houston	12.0	16.0	5.5	8.0
San Antonio	12.5	17.0	5.5	8.0

Naphtha

STANDARD OIL CO. (INDIANA)

	Tank wagon*
Oleum spirits	16.2
V.M.&P. naphtha	16.5
Cleaners' naphtha	15.5
Stanisol	15.5

*Prices include 3-cent Illinois tax but not 1-cent federal tax nor 2 per cent retail occupational tax.

Prices f.o.b. Chicago. Each price subject to discount of 1 cent per gallon for 150-gal. lots if covered by contract.

Canada*

3-Star Imperial Gasoline

IMPERIAL OIL, LTD.

	Gasoline Tank wag.	Incl. tax	Kero. tank wag.
Halifax, N. S.	24.5	10.0	18.0
St. John, N. B.	24.5	10.0	18.0
Montreal, Que.	24.0	8.0	16.5
Toronto, Ont.	24.5	8.0	17.0
Hamilton, Ont.	24.5	8.0	17.0
Winnipeg, Man.	27.5	7.0	22.5
Brandon, Man.	28.0	7.0	22.5
Regina, Sask.	25.0	7.0	20.0
Saskatoon, Sask.	20.8	7.0	22.8
Edmonton, Alta.	25.9	7.0	20.0
Calgary, Alta.	23.0	7.0	18.0
Vancouver, B. C.	21.0	7.0	23.0

*Imperial gallon used in Canada.

Divided dealers pay tank-wagon prices. Discount to undivided dealers, 1 cent below tank-wagon price. In Maritime Provinces both divided and undivided dealers pay tank-wagon price.

Tank-Wagon Changes

Standard Oil Co. (Indiana) reduced tank-wagon and dealer-gasoline and kerosene prices at practically all middle western cities June 11. Reductions reflected the lower freight rates from the Mid-Continent that were made effective that day by all railroads. Subnormal prices previously prevailing at Chicago, Grand Rapids, and Saginaw, Mich., were unchanged.

Standard Oil Co. (Kentucky) advanced consumer tank-wagon and dealer-gasoline prices throughout its territory in Georgia, Alabama, Mississippi, Florida, and Kentucky 0.25 cent per gallon June 6. Kerosene tank-wagon price was advanced 0.5 cent per gallon June 2 at Mobile, Ala., and 1 cent May 28 at Macon, Ga.

Standard Oil Co. (Indiana) advanced heavy fuel oils 0.25 cent per gallon at Chicago June 4.

(Continued on Page 111)

PRICES OF REFINED PRODUCTS...

All quotations f.o.b. plant in cars for interstate or export movement except as otherwise noted

Prices as of June 17, 1941
(Most prices in cents per gallon)

The quotations are exclusive of the federal excise taxes of 1 cent a gallon on gasoline and 4 cents a gallon on lubricating oils. Octane ratings in Middle West, Mid-Continent, and Southwest are based on A.S.T.M. method of testing.

Refinery Gasoline

OKLAHOMA (Group 3)—

U. S. Motor grades:		
72-74 octane (regular)	.05875	.06
63-66 octane	.055	.05625
60 octane and below	.05125	.0525
60-62 400 grades:		
72-74 octane (regular)	.05875	.06
63-66 octane	.055	.05625
60 octane and below	.05125	.0525

NORTH TEXAS—

U. S. Motor grades:		
72-74 octane (regular)	.0575	.05875
63-66 octane	.05375	.0550
60 octane and below	.05	.05125
60-62 400	.04875	.0575

NORTH LOUISIANA (Ark. and N. La. delivery)—

U. S. Motor grades:		
72-74 octane (regular)	.0575	.05875
63-66 octane	.05375	.0550
60 octane and below	.04875	.0575

ARKANSAS (Ark. and N. La. del.)—

U. S. Motor grades:		
72-74 octane (regular)	.0575	.05875
60 octane and below	.04875	.05125

CHICAGO (Based on Group 3)—

U. S. Motor grades:		
72-74 octane (regular)	.05875	.06
63-66 octane	.055	.05625
60 octane and below	.05125	.0525
60-62 400 grades:		
72-74 octane (regular)	.05875	.06
63-66 octane	.055	.05625
60 octane and below	.05125	.0525

PENNSYLVANIA (inland refineries)—

74-76 octane (regular)	.0750	.0775
80 octane (1939 Research)	.0775	.0800

CALIFORNIA (domestic movement)—

58-60 400, 65 oct. and higher	.06	.07
54-58 U. S. Motor	.0575	.0625

EAST COAST (domestic)—

U. S. Motor (minimum 72 octane):	
New York (Bayonne)*	.075 .080
Philadelphia	.080
Boston	.082
Baltimore	.070
Charleston, S. C.	.075

*All grades of gasoline ⅛ to ¼ cent less for barge shipments. New York Harbor prices are for New York and New England delivery. Prices for New Jersey delivery ¼ cent lower.

GULF COAST (domestic)—

U. S. Motor grades:		
80 (research)	.055	.05875
72-74 octane (leaded)	.05½	.05¾
70-72 octane (unleaded)	.05¾	.05⅞
68-70 octane (unleaded)	.05½	.05¾

Natural Gasoline

OKLAHOMA (Group 3)—

Grade 26-70	.03⅜
Grade 18-55	.04

NORTH TEXAS—

Grade 26-70	.03
Grade 18-55	.03½

CALIFORNIA—

75-85 375-390	.045	.05

NORTH LOUISIANA (Ark. and N. La. delivery)—

Grade 26-70	.03

Tractor Fuel

OKLAHOMA (Group 3)—

40-42 gr., 315-325 i.b.p., 110-flash, 540-550 e.p.	.03¾	.03⅞
41-43 gr., 300-320 i.b.p., 110-125 flash, 500-520 e.p.	.03⅞	.04
46-48 gr., 210-230 i.b.p., 480 max., e.p.	.04⅛	.04¼

Kerosene

(All kerosene water white)

OKLAHOMA (Group 3)—

42-44	.0450	.0475
41-43	.04375	.04625

NORTH TEXAS—

41-43	.0425	.04625

NORTH LOUISIANA (Ark. and N. La. delivery)—

41-43	.04375	.04625

ARKANSAS (Ark. and N. La. del.)—

41-43	.04375	.04625

PENNSYLVANIA (inland refineries)—

46	.055	.06125
45	.055	.06

CHICAGO (Based on Group 3)—

42-44	.0450	.0475
41-43	.04375	.04625

CALIFORNIA (Pac. Coast market)—

38-40 high-burning test	.045	.055

NEW YORK (Bayonne, N. J.)—

41-43	.052

GULF COAST (domestic)*—

41-43	.0325	.03375

*Barge price ⅛ cent lower.

Furnace Oil

OKLAHOMA (Group 3)—

Range oil	.04	.0425
No. 1 (white, 38-42)	.03825	.04125
No. 1 straw, 38-40	.0350	.03625
No. 2 straw, 32-36	.0350	.03625
No. 3 zero to 10, 28-32	.03375	.0350

NORTH TEXAS—

No. 1 (white, 38-42)	.0375	.03825
No. 1 straw, 38-40	.03375	.0350

NORTH LOUISIANA (Ark. and N. La. delivery)—

No. 2, 32-36	.0325	.03375

ARKANSAS (Ark. and N. La. del.)—

No. 2, 32-36	.0325	.03375

CHICAGO (Based on Group 3)—

Range oil	.04	.0425
No. 1 (white, 38-42)	.03825	.04125
No. 2 straw, 32-36	.035	.03625
No. 3 zero to 15, 28-32	.03375	.035

NEW YORK (Bayonne, N. J.)—

*No. 1	.052
*No. 2	.049
*No. 3	.049

*Barge deliveries ⅛ to ¼ cent under above tank-car price.

Gas Oil and Fuel Oil

(Gas oil per gal., fuel oil per bbl.)

OKLAHOMA (Group 3)—

No. 5, low pour point, 18-22	.85	.90
No. 6, 15 and above, 8-14	.85	.90

NORTH TEXAS—

No. 5, low pour point, 18-22	.80	.85
No. 6, 15 and above, 8-14	.80	.85

NORTH LOUISIANA (Ark. and N. La. delivery)—

10-14 fuel oil, industrial	.80	.85

CHICAGO (Based on Group 3)—

U.G.I. gas oil	.0325	.035
No. 5, low pour point, 18-22	.85	.90
No. 5, 15 and above, 18-22	.85	.90
No. 6, low pour point, 10-16	.85	.90
No. 6, 15 and above (10-16)	.85	.90

PENNSYLVANIA (inland refineries)—

36-40	.0525	.055

CALIFORNIA—

Los Angeles:		
30-40 gas oil, per bbl.	1.10	1.25
24 plus diesel, per bbl.	1.10	1.25
24 plus diesel (bunkers)	1.20	1.35
12-16 bunkers at tidewater)	.75	.85
10-16 (cargo lots)	.75	.85
12-17 (tank cars)	.65	.75
10-17 (high sulfur)	.55	.65
San Joaquin Valley:		
10-18 (tank cars)	.70	.85
24 plus diesel, per bbl.	1.10	1.25
San Francisco:		
24 plus diesel, per bbl.	1.35	1.40
24 plus diesel (bunkers)	1.40	1.50
10-16 (bunkers)	.80	.85

GULF COAST—

No. 2 fuel	.03⅛	.03¼
43-47 diesel	.03¼	.03⅜
48-52 diesel	.03⅜	.03⅝
53-57 diesel	.03½	.03⅞
58-and-above diesel	.03⅝	.03¾
Diesel bunkers		1.45
Bunker C (bulk cargoes)	.85	.90
Bunker C (bunkers)		.85

NEW YORK (Bayonne, N. J.)—

27 plus, gas oil		.050
28-30 diesel (lighterage 6¼c per. bbl.)		2.00
28-30 diesel (tank cars)	.049	.05
Bunker C (to ocean-going ships in N. Y. Harbor)	1.35	1.50
Industrial fuel (tank cars)		.038

Ligtherage charge 5c bbl. additional.

Bright and Steam Refined

OKLAHOMA (Group 3)—

200-210 D, 10-25	.22
150-160 D, 0-10	.18
150-160 D, 10-25	.175
100-110 D, 0-10	.175
100-110 D, 10-25	.17
Steam refined:	
600 dark green (untreated)	.105

PENNSYLVANIA—

Bright Stocks (Pennsylvania Grade No. 8 color, 140-150 at 210, 545-550 flash):		
10 pour point		.235
15 pour point		.225
25 pour point	.21	.23
Steam refined:		
600	.115	.13
650	.11	.14
600 flash	.115	.14
630 flash	.13	.15

Neutral Oil

(Vis. at 100° F. except Pennsylvania and color N.G.A.)

OKLAHOMA (Group 3)—

0-10 pour point:	
150-3	.095
180-3	.10
200-3	.10
250-3	.115
280-3	.125
280-4	.12
300-3½	.135
350-3½	.14
400-3½	.15
500-3½	.155
600-3½	.16
100-2½ paraffin oil 10-25	.06
10-25 pour point:	
200-3	.09½
250-3	.11
280-3	.12
280-4	.115

CALIFORNIA (moving to dom. market)—

Pale oils:		
200-2½-3	.07¼	.08
300-2½-3	.07¼	.08
400-3-4	.07¼	.08
450-3-4	.07¼	.08
550-3-4	.09	.11
600-3-4	.09	.11
Red oils:		
200-4-5	.07¼	.08
300-5-6	.07¼	.08
350-5-6	.09¼	.11½
400-5-6	.09¼	.11½
450-5-6	.09¼	.11½
500-5-6	.09¼	.11½
600-5-6½	.09¼	.11½
700-6½ plus	.09¼	.11½
750-6½ plus	.09¼	.11½
900-6½ plus	.09¼	.11½

GULF COAST—

Pale oils:		
100-3	.05¼	.05¾
200-3	.07¼	.07¾
300-3	.07¾	.08¼
500-3½	.08¼	.09
750-3½	.08¾	.09¼
1,200-3½	.08⅞	.09⅜
2,000-4	.09	.09½
3,000-4		.10½
Red oils:		
200-5-6	.06⅞	.07
300-5-6	.07¼	.07½
500-5-6	.08	.08⅛
750	.08⅜	.08½
1,200-5-6	.08½	.08⅝
100-2½-3	.07¼	.08

PENNSYLVANIA—

150 vis. at 70° F., 3 color, 400-405 flash:		
Zero pour point		.315
10 pour point		.305
15 pour point		.295
25 pour point	.28	.33
200 vis., at 70° F., 3 color:		
Zero pour point		.335
10 pour point		.325
15 pour point		.315
25 pour point	.30	.35

Wax and Petrolatum

(Prices per pound)

OKLAHOMA (Group 3)—

124-126 (A.m.p.) w.c. scale	.03	.03⅛

PENNSYLVANIA (inland refineries)—

122-124 (A.m.p.) w.c. scale	.0475	.05
124-126 (A.m.p.) w.c. scale	.0475	.05

NEW YORK—

Wax in bags fully refined:		
125-127 (A.m.p.) wax		.0560
128-130 (A.m.p.) wax		.0560
130-132 (A.m.p.) wax		.0585
133-135 (A.m.p.) wax		.0615
135-137 (A.m.p.) wax		.0640
Crude scale:		
124-126 (A.m.p.) w.s.	.0425	.045
124-126 (A.m.p.) y.s.	.040	.0425
Petrolatum in barrels, carload lots:		
Dark green	.02625	.03000
Amber	.02875	.03125
Extra amber	.02500	.02625
Lily white	.04875	.05375
Snow white	.05625	.06375
Cream	.04000	.04375

Export Prices

GASOLINE

GULF COAST—

60-62 400	.05	.06
61-63 390	.055	.0575
64-66 375	.055	.0575

LOS ANGELES—

U. S. Motor grades:		
Above 69 octane	.0575	.06
65-69 octane	.055	.0575
60-35 octane	.0475	.0525

KEROSENE

GULF COAST—

41-43 water white	.03375	.0375

LOS ANGELES—

41-43 water white	.05	.05¼

LUBRICANTS

(Pennsylvania Grade)

NEW YORK (f.a.s. in bbl.)—

Cylinder stocks:		
600 S.R. unfiltered	.18	.20
630 S.R. unfiltered	.185	.2025
600 flash, S.R.	.185	.205
650 flash, S.R.	.20	.21
Bright stock:		
Light, 25 pour point	.27	.285

NEUTRAL OIL

200-3 color	.33	.36
150-3 color	.31	.34

PARAFFIN WAX

NEW YORK (prices per lb.)—

123-125 A.m.p.		.0560
125-127 A.m.p.		.0560
128-130 A.m.p.		.0560
133-135 A.m.p.		.0615
135-137 A.m.p.		.0640
Crude scale:		
124-126 ws.	.0475	.05
124-126 y.s.	.0475	.05

MARKET RECORD OF ACTIVE OIL STOCKS . . .

Compiled by Carl H. Pforzheimer & Co., 25 Broad Street, New York City, Member New York Stock Exchange and New York Curb Exchange

New York Stock Exchange

1941 High	1941 Low	Week ended June 14 High	Low	Close	Stocks—	Total shares outstanding	Par value	Latest dividend	Payable or last paid	Dividends paid in 1940	Com. sh. earn. 1940	1939	1940 High	1940 Low	1939 High	1939 Low
58¼	43	58⅜	53½	58	Amerada Corp.	788,675	N.P.	50cQ	4-30-41	$2.00	$2.25	$1.56	58½	38½	74½	50
24¼	19½	21⅛	20	20¾	Atlantic Refining	2,663,999	$25	25cQ	6-16-41	1.00	2.11	1.66	27⅛	18¼	24⅜	18⅛
10½	7	8½	8⅛	8⅜	Barber Asphalt Co.	390,223	$10	25c	5-21-40	.50	—.48	1.39	16⅝	8½	21	10¼
9⅞	7⅝	9⅝	9⅛	9⅛	Barnsdall Oil Co.	2,558,779	$5	15c	6-9-41	.60	.97	.76	13⅜	7⅛	19½	11⅛
6½	5¼	6⅛	5⅞	6⅛	Consolidated Oil Corp.	13,751,726	N.P.	12½cQ	8-15-41	.72½	.28	.55	8⅛	5½	9⅞	6½
22⅞	17⅜	22⅞	21¾	22¾	Continental Oil of Delaware	4,682,572	$5	25cQ	6-30-41	1.00	.92	1.35	25	16⅛	31½	19⅞
4¾	3½	4⅛	3⅞	4⅛	Houston Oil	1,098,618	$25	....	10-17-30	....	.30	.43	6⅞	3⅜	9⅜	4½
12	9⅝	11⅞	11⅝	11¾	Lion Oil Refining	435,815	N.P.	25cQ	4-15-41	1.00	1.05	1.50	14⅜	9	18⅛	10
17¼	13	16⅞	16	16⅝	Mid-Continent Petroleum	1,857,912	$10	40c	6-21-41	.80	1.60	1.42	17⅜	11½	18	11⅛
11¾	9⅜	10⅞	10	10⅞	Mission Corporation	1,378,645	$10	25c	12-20-40	.25	1.01	.87	11¾	7⅛	14⅞	8¾
6⅝	4¼	6⅜	5⅞	6	National Supply	1,155,517	$10	....	12-22-37	....	—.49	—.87	9¾	4⅝	15½	5⅝
9½	6¾	9¼	9	9¼	Ohio Oil Co.	6,563,377	N.P.	25c	6-14-41	....	1.02	—.10	8¾	5⅜	10½	6
8	5½	6¾	6¾	6¾	Pacific Western Oil	1,000,000	N.P.	40c	12-19-39	....	—.21	.81	8⅞	5½	11⅞	7
10⅜	7¼	8½	8½	8½	Pan American Pet. Trans.	4,702,945	$5	25c	12-21-40	.25	1.20	1.10	10½	6¾	8¾	5
44	35¾	44	42¼	44	Phillips Petroleum	4,449,052	N.P.	50cQ	5-31-41	2.00	2.60	2.21	41¾	27⅛	46½	31¼
16⅞	14¼	16⅛	15¾	16	Plymouth Oil Co.	1,038,633	$5	30c	6-30-41	‡1.30	1.38	2.38	22¾	15	24	17⅛
10	7	10	9½	9⅞	Pure Oil Co.	3,982,031	N.P.	25c	12-20-40	.25	1.21	1.11	11½	6¾	11⅜	6⅛
9	7¼	8¼	8⅛	8⅛	Richfield Oil Corp.	4,010,000	N.P.	50c	12-21-40	.50	.95	.65	9¼	5⅞	10¼	6⅝
15⅞	12½	15⅞	15½	15⅝	Seaboard Oil of Delaware	1,244,383	N.P.	25cQ	6-14-41	1.00	1.05	1.40	20	11	24⅜	15½
15	10⅛	14¼	13¾	14¼	Shell Union Oil	13,070,625	N.P.	50c	12-20-40	.75	1.05	.77	13⅛	7⅝	17¼	9⅞
28¾	18⅞	28¼	27	28¼	Skelly Oil	995,349	$15	50c	12-20-40	1.25	3.28	1.99	23¼	12¼	29½	15½
9⅞	8¼	9¼	8	9	Socony-Vacuum	31,206,071	$15	25cSA	3-15-41	.50	1.17	1.10	12½	7⅛	15⅛	10¼
23½	17⅞	21¾	20⅜	21⅛	Standard Oil of California	13,003,953	N.P.	25cQ	6-16-41	1.00	1.73	1.38	26⅛	16¼	33⅝	24¼
31	25½	30⅜	29⅞	30⅛	Standard Oil (Indiana)	15,272,020	$25	25c	6-16-41	1.50	2.20	2.23	29	20⅜	30	33¾
39⅜	33	39½	37⅞	39½	Standard Oil of New Jersey	27,280,998	$25	1.00†	6-16-41	1.75	4.54	3.26	46½	29⅞	53½	38
42	34¼	42⅛	39⅞	42	Standard Oil of Ohio	753,740	$25	37½c	6-14-41	2.00	7.44	6.64	41¾	26¼	32¾	17
58¾	50	53¾	52	53¾	Sun Oil	2,434,863	N.P.	25cQ	6-16-41	*1.00	3.03	2.74	65⅞	46¾	66	45¾
2¼	1⅜	2⅛	2	2⅛	Superior Oil Corp.	1,388,979	$1	10c	12-28-40	.10	.11	.04	2½	1⅛	3⅝	1⅜
40⅜	34½	40⅛	39⅛	39¾	Texas Corp.	10,876,139	$25	50cQ	7-1-41	2.00	2.90	3.02	47⅝	33	50¾	32½
4⅛	2⅞	3¾	3⅝	3⅝	Texas Gulf Producing Co.	888,147	N.P.	10c	6-14-41	.20	.63	.69	4¼	2½	5¾	3¼
6¾	5¼	6¼	6	6⅛	Texas Pacific Coal & Oil	888,236	$10	10c	6-2-41	.40	.54	1.00	8⅝	5⅜	11⅜	7
10¾	9⅜	10⅛	9⅝	10	Tide Water Associated	6,371,827	$10	15c	6-2-41	.70	1.14	1.05	12	8¾	14¼	9½
14¾	12¾	14⅛	13⅞	14	Union Oil Co. of California	4,666,270	$25	25c	5-10-41	1.00	.99	1.25	17½	12	19¾	15⅛
30⅞	25⅝	30¾	29⅞	30⅛	Union Tank Car Co.	1,177,381	N.P.	50c	6-2-41	1.75	2.22	2.07	29⅞	22¾	24¼	20⅛
2⅜	1⅝	2⅛	2⅛	2⅛	Wilcox Oil & Gas	470,768	$5	10c	2-15-40	....	.35	.77	3⅝	1¾	4¼	2⅜

*Also 5 per cent in stock. †Includes extras. ‡Also 2 per cent in stock. —Deficit.

New York Curb Exchange

1941 High	1941 Low	Week ended June 14 High	Low	Close	Stocks--	Total shares outstanding	Par value	Latest dividend	Payable or last paid	Dividends paid in 1940	Com. sh. earn. 1940	1939	1940 High	1940 Low	1939 High	1939 Low
¾	¼	⅝	½	½	American Maracaibo Co.	1,778,415	$1	....	.....	....	—$0.05	—$0.04	⅛	¼	1¼	½
7⅝	5⅛	7⅜	6⅞	7⅜	American Republics Corp.	1,308,049	$10	25c	12-18-40	....	.78	.14	10¾	4½	11⅜	5½
1⅜	1	1½	1½	1½	Bridgeport Machine Co.	263,700	N.P.	$1.25	12-30-37	....	—.88	—.95	3¼	1⅜	7¼	2½
42½	36½	41½	41½	41½	Buckeye Pipe Line Co.	200,000	$50	$1	6-14-41	$4.00	5.09	3.13	43	28	34¾	26½
110¼	87	87	87	87	Chesebrough Mfg. Co.	120,000	$25	$1.50Q†	6-23-41	6.00	6.33	7.87	117	95	130	108⅝
5⅛	3¾	4¼	4	4	Cities Service (new)	3,703,978	$10	....	6-1-32	....	1.72	.68	6¾	4	9¼	4¼
1½	¾	1⅛	1⅛	1⅛	Cosden Petroleum	465,332	$1	.....	.....	....	....	....	2⅛	⅝	2¼	½
17¼	12½	16¼	15¼	15½	Creole Petroleum	6,974,356	$5	50cSA†	6-16-41	1.00	.98	1.38	24¼	11⅝	28	16¾
7¼	3¾	7	6¾	6¾	Darby Petroleum	351,390	$5	25c	7-15-41	....	1.12	.03	4⅜	2⅞	7⅛	3⅝
1¾	1	1¾	1⅝	1¾	Derby Oil & Refining	263,162	N.P.	....	.....	....	.12	—.37	2	¾	2⅝	1½
28¾	21¼	22¾	22¾	22¾	Eureka Pipe Line	50,000	$50	50c	5-1-41	2.25	—.49	.63	31	20¼	23	15⅛
35½	29	35	34	34⅝	Gulf Oil Corp.	9,076,202	$25	25cQ	7-1-41	1.25	2.44	1.69	39⅞	25⅛	45⅛	29¼
63	52¾	61	60⅛	60⅛	Humble Oil & Refining	8,987,840	N.P.	37½c	7-1-41	2.00	3.13	3.33	68	47⅛	71	42½
7	5¾	6⅝	6⅜	6⅜	Imperial Oil of Canada	26,965,078	N.P.	25c	6-2-41	.62½	.65	.71	12⅜	5⅜	17	11⅜
5	2¾	5	4¼	4⅞	Indiana Pipe Line	300,000	$7.50	20c	11-15-40	*2.80	.09	.33	7¾	3	7¼	5½
11	8⅞	9¾	9¼	9½	International Petroleum	14,324,088	N.P.	50c	6-2-41	1.25	....	1.19	10¾	8¼	27½	17
2⅝	1¾	.....	.....	.....	Kirby Petroleum Co.	500,000	$1	10c	3-15-41	....	.16	.06	2¾	1⅝	3⅜	2⅛
10⅛	8½	8⅞	8½	8⅞	Lone Star Gas	5,518,347	N.P.	20c	4-22-41	.70	1.17	.98	10⅜	7⅝	10½	7⅛
5⅜	4⅛	5¼	5	5	Louisiana Land & Exp.	2,966,762	$1	10c	6-16-41	.35	.29	.22	6¼	3¾	7¾	4
10	9½	.....	.....	.....	Margay Oil Corp.	149,943	N.P.	25cQ	4-10-41	1.00	1.02	1.52	17	9¼	17	14½
8	7	7¼	7⅛	7¼	Midwest Oil Co.	998,474	$10	45c	6-16-41	.90	.88	.99	8½	5½	8¾	6⅝
6⅛	5⅛	5½	5⅜	5½	Mountain Producers	1,593,584	$10	30cSA	6-16-41	.60	.58	.70	6¼	4⅞	6	4⅞
12⅜	10⅛	10¾	10½	10¾	National Fuel Gas	3,810,183	N.P.	25cQ	4-15-41	1.00	1.12	.95	13⅛	10	14	11¼
12¾	10¼	11⅝	11½	11⅝	National Transit	509,000	$12.50	50c	6-16-41	1.00	1.08	.91	12½	8¾	9½	7¼
1¼	1	1⅛	1	1⅛	New Mexico and Arizona	1,000,000	$1	1c	12-1-37	....	.03	.02	1¼	¾	1¾	1
8	6⅝	7½	7½	7½	New York Transit	100,000	$5	30c	4-15-41	.60	.91	.88	7¾	5¼	6	4
9¾	8	9¾	9½	9½	Northern Pipe Line	120,000	$10	50c	6-2-41	.80	.70	.31	9⅞	6	7	4½
3⅞	2⅝	4	3¾	4	Pantepec Oil	2,856,872	$1	.....	.....	....	....	....	5½	2½	7⅝	4
2¼	1	2¼	1⅞	1⅞	Root Petroleum Co.	336,045	$1	25c	2-1-37	....	.04	.70	3¼	1	5	1⅝
2⅝	2⅛	2⅝	2½	2⅝	Ryan Consolidated	298,931	N.P.	10c	12-28-40	....	.43	.16	3	1¼	3	1⅞
8	6½	7½	7	7¼	Southern Pipe Line	100,000	$10	25c	3-3-41	.50	.81	.25	11¾	4¾	4⅞	3½
39¾	36⅛	37¾	36⅝	37¾	South Penn Oil	1,000,000	$25	37½c	6-27-41	2.50	2.10	2.84	44	28	40½	26¾
30½	23	26	26	26	Southwest Penna. Pipe Lines	35,000	$50	50c	7-1-41	6.50	3.22	2.06	35	21	23	18
20¾	17⅞	19	18⅞	19	Standard Oil of Kentucky	2,604,790	$10	25c	6-16-41	1.30	1.47	1.53	20⅞	16½	20⅛	17¼
1⅞	1⅜	1⅞	1¾	1⅞	Sunray Oil	1,975,876	$1	5c	12-20-40	.10	.23	.25	2	1⅜	2⅜	1⅜
3¼	2¾	2⅞	2¾	2¾	Texon Oil & Land	936,024	$2	10c	6-28-41	.40	.45	.49	3⅛	2	4	2⅝
3⅜	2¼	3⅜	2⅞	3⅜	Transwestern Oil Co.	750,000	$10	....	.....	....	—.59	—1.42	3⅜	2	6	2½
⅛	½	⅝	½	9/16	United Gas Corp.	7,818,959	$1	....	.....	....	—.49	—.55	2⅛	¾	3⅜	1½

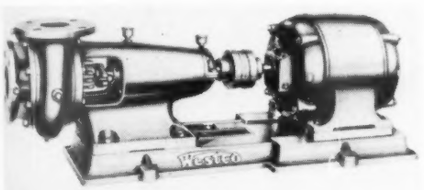
*Includes $2.50 capital distribution. †Includes extras. —Deficit.

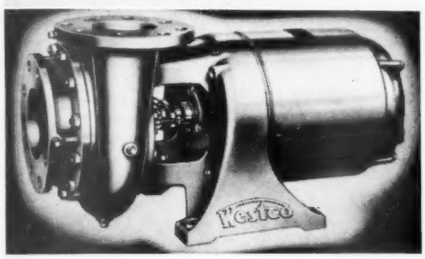
EQUIPMENT PROGRESS...

Westco Offers New Line of Side-Suction Centrifugals

Streamlined throughout, the new line of Westco side suction centrifugal pumps includes flexible coupling drive models in sizes 1¼ to 6-in. inclusive and Uni-Bilt models in sizes 1¼ to 4-in. inclusive. These compact, ruggedly built units incorporate the latest features in centrifugal pump design, are precision made to withstand the strain of continuous service, and rigidly inspected to eliminate unnecessary installation and maintenance expense.

A heavy close-grained cast iron, torpedo-type frame absorbs all operating strain and guards against misalignment. The suction cover is rib reinforced to withstand distortion. Two oversize ball bearings (on flexible coupling-drive models) are completely enclosed and have flush-type lubrication.





Enclosed or semiopen impellers are hydraulically and mechanically balanced to insure quiet operation. The enclosed style is recommended for handling clear liquids and semiopen, nonclog impellers should be used for liquids containing foreign material in suspension. The tapered fit insures positive centering on shaft. Special metal pumps for handling corrosive or abrasive liquids can be furnished to meet specific pumping requirements.

Scientific design provides a smooth, streamlined channel flow that minimizes turbulence within the pump, reduces erosion and provides extra years of dependable service. The discharge can be installed in four positions without reducing the accessibility of the stuffing box. Further information can be obtained from Micro-Westco, Inc., Bettendorf, Iowa.

TRADE LITERATURE

BROWN INSTRUMENT CO., Philadelphia, Pa.—Catalog No. 77-1—"Brown and Minneapolis-Honeywell Industrial Power Units and Motorized Valves." This catalog describes a line of motor power units and motorized valves designed to operate with Brown control instruments and form an important part of the control system. By using a control instrument and control motor designed specifically for each other, the best results are obtainable.

ALLIS-CHALMERS MANUFACTURING CO., Milwaukee, Wis.—A new comprehensive 40-page bulletin (B-6146) for every pumping service requiring a high-grade single-stage double-suction centrifugal pump. In addition to construction features, pump dimensions, normal and special application data, this profusely illustrated bulletin presents friction tables, head-capacity tables, and other valuable pump-engineering information.

NORTON CO., Worcester, Mass. — 28-page booklet, "Disc Grinding—A Production Operation," illustrating and describing its various types of disk-type grinding wheels and cylinders. A table recommends the type of wheel to be used for each operation or material and outlines important facts for ordering.

Electric Immersion Heaters Aid Fuel-Oil Handling

The heavier grades of fuel oil due to their high viscosity often require heating, especially during cold weather, before they can be economically pumped. The electric immersion heater shown here is offered by Edwin L. Weigand Co., 7502 Thomas Boulevard, Pittsburgh, Pa., for heating fuel oil stored in underground tankage, or for use in tank cars.

The heater shown here is of 12 kw. capacity with circular-bladed heating elements and extra-long riser containing the electrical connections brought through the cover plate of the manhole to weatherproof terminal boxes. From these boxes the wiring is continued in rigid conduit to the power supply. The heated section of this type of multiblade immersion heater consists of the circular blades at the bottom, so the heat is concentrated in the tank near the suction outlet pipe. Other types of Weigand electric immersion heaters have straight heating blades, for use in preheating fuel oil before it is charged to the burning system.

AMONG EQUIPMENT MEN

Percy L. Johnson Joins Neptune Sales Force

His many friends in the oil industry will be interested to learn that Percy L. Johnson, of Tulsa, has been appointed by Neptune Meter Co. to cover the Oklahoma sales territory on Red Seal gasoline-dispensing pumps and Neptune petroleum meters.

During his 14 years' experience in the marketing of equipment in this field—6 years of which he spent as branch manager for the Service Station Equipment Co.—Mr. Johnson has become thoroughly familiar with oil-company operating methods and widely acquainted with their personnel. Since 1933 he has been calling on the Oklahoma trade, so that when he visits these oil operators in his new capacity he will be assured of cordial greetings.

R. B. Downing Joins Lane-Wells As Sales Engineer-Geologist

R. B. (Ike) Downing, well-known Mid-Continent consulting geologist, recently joined Lane-Wells Co. as sales engineer-geologist. He will make his headquarters in the Union National Bank Building at Wichita, Kans. Mr. Downing attended the Colorado School of Mines for 3 years and was graduated by the University of Oklahoma with a B.S. degree in 1925. After graduation he spent 2 years in mining work and since 1927 has been engaged in geological engineering work for the oil industry.

Haering Company Announces Additions to Personnel

Continued increased sales and further expansion of the service representation plan have necessitated the promotion and addition of several chemists and engineers to the service organization of D. W. Haering & Co., Inc., 2308 South Winchester Avenue, Chicago. Several promotions include E. H. Snyder, transferred from Wichita, Kans., to district manager of the Houston area with offices at 726 Electric Building, Houston, Tex. C. E. Erb has been promoted to district manager of the Wichita, Kans., division offices and laboratories located at 557 West Douglas Street.

Expansion in the Southwest includes the appointment of S. R. Long, sales engineer with headquarters at 1108 North Twelfth Street, Waco, Tex., and the addition of Gray I. Thomas, sales engineer with offices at 2423 Caroline Street, Dallas, Tex.

A new office in the Midwest has been established at 208 East Main Street, Pomeroy, Ohio, with N. D. Russell, registered professional engineer in charge. Further expansion in the Ohio River Valley includes the appointment of Harry McLear, sales engineer with headquarters in Evansville, Ind. Increased research activities in the Chicago laboratory have required the addition of another chemist, John Daggett.

Petroleum Solvents Offers Additive for Treating Lubes

Petroleum Solvents Corp., 331 Madison Avenue, New York, is now manufacturing and marketing an additive for treating motor lubricating oil to give it corrosion-inhibiting, antioxidant, detergent and sludge-dispersing properties. It is also claimed that this additive helps to reduce coefficient of friction, impregnates metal to give oiliness and prevent corrosion, and that it will not be removed from the oil by even the very fine-filtration type of engine oil filter.

BUSINESS NOTES

After 54 years of continuous service, A. W. Parker is this month retiring from active service with the Worthington Pump & Machinery Corp. Well known in industrial advertising and engineering circles, Mr. Parker entered the field in 1887, starting as a draftsman. Through many years he served as mechanical engineer and product designer and contributed importantly to the development of a variety of pumping machinery. Later, he entered the publicity function, in which he was engaged until his retirement.

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LEASES—East Texas, La., South Ark. 20 acres up, dollar acre up.—Owners—Address Attorney, Box 1122, Little Rock, Ark.

NEW MEXICO
Oil and Gas Leases and Royalties
ROY G. BARTON, Hobbs, N. M.

GOOD investment: 30-acre, new lease, hot play! $3 per acre. C. A. Parker, Box 451, Center, Texas.

FOR SALE: Oil and gas leases and small production located in Kentucky shallow field, also tracts of proven Fluorspar and zinc deposits. Reports on request. W. P. HARLEY, Bowling Green, Kentucky.

WILL sacrifice for quick sale account of health, Lea County, New Mexico 40 acres each Sections 15 and 21, 17S-36E. Lock Box 126, Vinton, Va.

HAVE 2500-acre drilling block. Looks good for production. Ten-year leases. C. A. Parker, Box 451, Center, Texas.

WARD-Crane sec. 18B 28, near Silurian test; cheap fee or lease. J. G. Smith, 215 Littlefield Bldg., Austin, Texas.

MICHIGAN—1,160 acres to lease for Oil and Gas. Map free. Owner: L. J. Meldrum, 8354 Epworth, Detroit, Mich.

FOR quick sale: New 10-acre lease, 1100 feet from production. Price $100. C. A. Parker, Box 451, Center, Tex.

ATTENTION promoters: Block of leases, geology and structure in 30-47, 30-48. Write Box 312, Springfield, Colo.

WILL FARM OUT one hundred and sixty acre lease, ¼ of a mile east of Fred Watson #2 well in Sec. 1-20-28, Miller County, Ark. This well has made 200,000 barrels and is now making 200 barrels per day. W. B. Worthen, P. O. Box 71, Texarkana, Texas, Phone 2869-J.

U. S. OIL RESERVE lands can be filed for lease on limited acreage by American Citizens. Want several join me in filing block in developing Rocky Mountain Area. Big opportunity. Small expense. Box A-346, The Oil and Gas Journal, Tulsa, Okla.

Oil Industry Printing

OIL FIELD LEGAL BLANKS
Leases, assignments, releases, township plat books, well records, etc. Request on your letterhead gets free catalog. Olds Press, 215 East Third St., Tulsa, Okla.

Geophysical Service

LOCATIONS with the TRUMBULL INSTRUMENT have proven themselves in various fields. Write for full details before you drill. TERRA SURVEYS, Box 23, Waterloo, Illinois.

THE GRAVITATIONAL SELECTOR IS THE ANSWER TO THE SAFE DEVELOPMENT OF NEW POOLS. It is the quickest, the surest, the cheapest and gets RESULTS when other systems fail. Write Geologist, 14957 Lakewood Heights Boulevard, Lakewood, Ohio.

Help Wanted

PIPING Draftsmen experienced in process plant layout, equipment piping and related work. Several excellent opportunities for capable men who wish employment in growing business in the Pittsburgh district. Write, stating qualifications and salary expected. All replies will be handled confidentially. Address Box A-514, The Oil and Gas Journal, Tulsa, Okla.

MACHINIST capable of maintaining Worthington BG and CG gas engines, centrifugal and reciprocating pumps including hot oil pumps, also operation machine shop tools. Refinery experience preferred. Open shop. Box A-520, The Oil and Gas Journal, Tulsa, Okla.

WANTED—CHIEF ELECTRICIAN
Preferably a man with engineering training and who has had experience as electrical draftsman, to take charge of electrical maintenance and construction work in a Middle West refinery. Box A-544, The Oil and Gas Journal, Tulsa, Okla.

WANT—Good joint turner in oilfield shop. Year around job $1.25 per hour. In good town, Rocky Mountain area. Box A-545, The Oil and Gas Journal, Tulsa, Okla.

Situations Wanted

REFINERY Engineer, Superintendent, Manager. Well experienced in design, construction and operation of modern refinery equipment. Age 41. Box A-480, The Oil and Gas Journal, Tulsa, Okla.

EXPERIENCED lease and title man desires work assembling block leases or title curing. Has own car. Can give references to honesty, ability, efficiency and diplomacy. 12 years' experience. Married. Box A-543, The Oil and Gas Journal, Tulsa, Okla.

PIPE LINE Operator, Experienced on gasoline and crude lines, automatic electric and diesel stations, diesel maintenance. Relocate or travel. Available at once. Box A-542, The Oil and Gas Journal, Tulsa, Okla.

EXECUTIVE with twenty-five years' experience in the producing and land departments, part of this time as executive vice president of major Independent company which was merged with a major company, desires connection independent company or parties with money to invest in the oil business as there are many opportunities in the southwest country to make money. Box A-541, The Oil and Gas Journal, Tulsa, Okla.

Royalties

ANDREW J. BARRETT
The Philtower
Tulsa, Oklahoma

OUR READY MARKETS Enable us to pay cash for producing royalty acreage, lots, units and oil payments. GLOBE SECURITIES CO., LTD., Registered Bonded Dealers, Oklahoma City, Okla.

MAPS, information, valuations, well reports, etc., on royalties and producing properties, Texas and New Mexico. ROYALTY OWNERS SERVICE, P. O. Box 1535, Fort Worth, Texas.

I OFFER production oil royalties, Texas, Oklahoma and Illinois. Monthly income. John Stouppas, Youngstown, Ohio.

Attention: Oil Men and Royalty Dealers

Am open to negotiation for exclusive representation in the East to wholesale producing and non-producing royalties among better type securities dealers. If you have the properties, financial resources, and reputation for "square-dealing," address Box A-546, The Oil and Gas Journal, Tulsa, Okla.

Incorporations

DELAWARE CHARTERS: Complete service $35. Submitted forms. Chas. G. Guver, Inc., Wilmington, Delaware.

CAPITAL SEEKERS
Put your project before 260 Key-Men. Cost trifling. Details free. AMSTER LEONARD, Fox Theater Building, Detroit, Michigan.

Business Opportunity

A 1500 BBL. skimming and cracking plant for lease, ample oil can be secured, wide local markets for products. Must have ample working capital; located in West Texas; no promotion. Address inquiries to Box A-512, The Oil and Gas Journal, Tulsa, Okla.

Ranches—Farm Lands

WE HAVE assembled several hundred choice farm and ranch properties located throughout Texas, Oklahoma, New Mexico and Colorado, priced below present market with reasonable terms if desired. Write today for our farm lands and ranch lands booklet containing full descriptions, prices and terms. Please indicate whether you want farm lands booklet or ranch lands booklet; we have separate booklets. J. C. MYTINGER REALTY COMPANY, P. O. Box 1190, Wichita Falls, Texas.

Mailing Lists

ROYALTY owners, Oil Investors, Unit holders, Stockholders in Oil and Royalty Companies. Personnel lists of every branch of oil industry. All by States. We buy lists. New Catalogues ready. Oil Industry Mailing List Co., Tulsa Loan Bldg., Tulsa, Oklahoma.

Equipment Wanted

WANTED: All makes of used Diesel Engines, preferably "Caterpillar" Diesels Write price, condition and location to Fabick Tractor Co., Box 503, Salem, Ill.

WANTED TO BUY—Good used 3, 4 and 6-inch line pipe and fittings. Write P. O. Box 692, Charleston, S. C.

WANTED: Late model 6¾ x 12 National Slush Power pump or late 6 x 12 OILWELL; 2500 to 4500' 2½" INTERNAL FLUSH drill pipe. A. W. Adkisson, 2019 W. T. Waggoner Bldg., Ft. Worth, Texas.

ROTARY drilling rig and tools complete. Capable of drilling to 4,000 feet. Send inventory. Must be in good condition and at distressed price. Can also use a slim hole outfit. C. W. Teator, 808 Second Natl. Bank Bldg., Saginaw, Mich.

For Sale—Equipment

FOR SALE at Oklahoma City: Two Direct Current Belt Driven GE Generators, 7½ K.W., Type C.D., $100 each.—I.T.I.O. Co., Bartlesville, Okla.

100 H.P. 200# Broderick Boiler. Will pass inspection. Lucey Products Corp., Tulsa, Oklahoma.

FOR SALE—At Coyle, Oklahoma, One Steam Drilling Rig complete, less drill pipe, rotary table and traveling block. Equipment capable of drilling to depths 6500 to 8000 feet.
T. T. EASON AND COMPANY
Enid, Oklahoma.

FOR SALE at Oklahoma City: 1 Jones Super Woodworker with four cylinder Le Roi Engine. I.T.I.O. Co., Bartlesville, Okla.

TRACTORS
Caterpillars, crawler type, size "35" $375; size "65" with nigger head winch $795.00; Allis-Chalmers, model L with bulldozer $1850; Austin Western hydraulic grader 10' blade $650. O. C. Evans, Mt. Sterling, Kentucky.

FOR SALE at Oklahoma City: 2—72" x 8' Southwestern Tangential Gas Scrubbers, 75# W.P.—115# Test. I. T. I. O., Bartlesville, Okla.

2—#45 Star S.T. Spudders or will trade for production. Bert Miller, Phone 623, Salem, Illinois.

100,000' of used ⅝" and ¾" pull rods for sale. Galoob Iron & Metal Co., P. O. Box 372, Healdton, Okla.

ONE 50 H.P. Bessemer type GD Single Cylinder Gas Engine. $300.00. I.T.I.O., Bartlesville, Okla.

NOTICE — CABLE-TOOL CONTRACTORS. Save money; good used wire lines. All sizes up to 5,000 ft. long. See us before you buy. General Tool & Supply Co., P.O. Box 4387, Oklahoma City, Oklahoma.

FOR SALE at Bartlesville: One 8" x 3¼" x 8" Ingersoll-Rand High Pressure Portable Compressor. I.T.I.O., Bartlesville, Okla.

FOR SALE — Gasoline Rotary Drilling Rig; Good for 2200 feet. P. O. Box 58, San Antonio, Texas.

1 STRING Heavy Standard Rig tools 15" down, located in Oklahoma. J. E. Taylor, Route 1, Skiatook, Okla.

FOR SALE at Oklahoma City: Reconditioned 12" Goulds Fig. 3065 Single Stage, Double Suction, Centrifugal Pump with bed plate for motor mounting. 6,000 G.P.M., 96 ft. head. 1175 R.P.M. — I.T.I.O. Co., Bartlesville, Okla.

FOR SALE: Pressure vessels 8' diameter by 31' 8" long. Tested 200 pounds hydrostatic pressure. Suitable for butane, propane or as pressure wood creosoting treating units. Harvey Bros., 706 Rudd, Canon City, Colo.

FOR SALE: 125 H.P. 200 W.P. Broderick Boiler, Code Condition. $975. Melton Supply Co., Seminole, Okla.

CLASSIFIED ADVERTISING RATES

Classified advertising rates: First insertion, 35 cents a line; each additional insertion, 25 cents a line, PAYABLE IN ADVANCE. Six words usually make a line. Count as a word each one-letter word and each group of figures. White-space computed at regular line rate. Allow two extra lines for blind ads. Ads of less than three lines not accepted. No formal acknowledgment is made, and proofs cannot be shown in advance of publication.

	1 time	2 times	3 times	4 times
3 Lines	$1.05	$1.80	$2.55	$3.30
4 Lines	1.40	2.40	3.40	4.40
5 Lines	1.75	3.00	4.25	5.50
6 Lines	2.10	3.60	5.10	6.60
7 Lines	$2.45	$4.20	$5.95	$7.70
8 Lines	2.80	4.80	6.80	8.80
9 Lines	3.15	5.40	7.65	9.90
10 Lines	3.50	6.00	8.50	11.00

CLASSIFIED DISPLAY RATES

Classified Display is set with a border and may be used in one or two column sizes.

1 Inch	1 time	$5.00
1 Inch	13 times	4.50 per inch
1 Inch	26 times	4.00 per inch
1 Inch	52 times	3.50 per inch

This space may be contracted for over a period of one year from the date of the first insertion and is PAYABLE IN ADVANCE, MONTHLY.

We reserve the right to withhold all advertising of questionable character. To avoid delay be sure to send remittance with copy. We will set your ad in the smallest amount of space possible and refund all overpayments. One-time insertions will not be run until fully paid. Forms close MONDAY NOON before each issue date.

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